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THE  
HOME FRIEND

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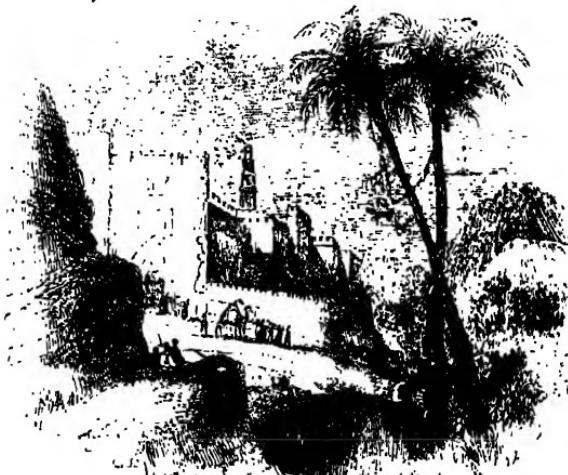


THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.  
*S.P.C.K. VOL.*

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WALLS AND GATE OF JERUSALEM.

BRIEF HISTORICAL NOTICE OF JERUSALEM.

THE inspired penman has truly said of Jerusalem, "Thy servants take pleasure in her stones, and favour the dust thereof." Though now degraded and defiled, ruined and desolate, we cannot forget that Zion was once the chosen mountain of Jehovah, the very perfection of beauty, and joy of the whole earth. From Jerusalem went forth the word of the law, —all nations went up to worship within her gates,—David, the man after God's own heart, reigned in her over the people of Israel, and his lyric sounded upon her sacred hills. The visible glory of the Lord shone in her beautiful temple; and, above all, upon this holy mountain the anointed Son of God shed his most precious blood—then burst the bands of the tomb, rose from the dead, and ascended up to heaven.

In Jerusalem, too, repentance and remission of sins were first preached to sinners in his glorious name,—and she was selected by both prophets and apostles as the type of “that great city, new Jerusalem,” or as St. Paul styles her, “the Jerusalem that is above.”

To the Christian reader every mention of the present afflicted state of this highly-favoured city will recall the prophetic words of our Saviour, “*Behold thy house is left unto thee desolate.*” But while in this point of view Jerusalem is to us all a fearful warning of the consequences of unbelief, and abuse of great privileges, in another respect she may remind us of that mercy which is greater than even our sins. The word of God leads us to hope and expect days of pardon and of peace for Zion, when Jerusalem shall “shake herself from the dust, and arise, and sit down.” For when her children shall say, “Blessed is he that cometh in the name of the Lord,” the curse shall be taken away, and “Jerusalem shall again be safely inhabited,” “in her own place, even in Jerusalem,” and “upon her inhabitants shall be poured out the spirit of grace and of supplication.” Then shall “living waters go out of her,” and the nations shall resort to her again, “year by year, to worship the King, and Lord of hosts.” Then will her glory be greater than it was of old, for it will be more entirely the glory of holiness,—when “every spot in Jerusalem shall be holiness unto the Lord of hosts,”—when there shall be no more the Canaanite in the house of the Lord of hosts, and when her sons shall say, “There is strength for the inhabitants of Jerusalem in the Lord of hosts their God.”\*

“Jerusalem is presumed to owe its origin to Melchizedee; and if so, must have been founded two thousand years before the advent of our Lord. In the succeeding century it was captured by the Jebusites, who extended its walls, and built a castle or citadel upon Mount Sion. It was taken from them by the forces under the command of Joshua,† but they long retained possession of the fortress; nor was it established as the capital of Israel till the time of King David. Its magnificence was chiefly owing to the works of his son and successor, Solomon, who adorned it with sumptuous edifices, and, above all, with a temple . . . which has in no age been, nor will be, excelled in splendour and magnitude. During the period of Rehoboam the city was stormed and plundered by Shishak king of Egypt; and a similar fate befel it about a century and a half afterwards, from Joash king of Israel. In the reign of Manasseh it was besieged and taken by the Assyrians, when the idolatrous monarch was carried captive to Babylon. Its destruction, however, was not effected till the time of Zedekiah, when Nebuchadnezzar, actuated by a spirit of fury, committed terrible ravages, razing the fortifications, setting flames to the temple, and carrying away the inhabitants as prisoners, in the view of adding to the population of his own capital. Seventy years afterwards they were restored, and Zerobabel began to rebuild the sacred structure. Alexander the Great could not be said to have taken it, since the place voluntarily submitted to him, when he entered it as a friend, and offered sacrifices in the temple. It was sacked by Antiochus Epiphanes, who profaned the holy city by placing the image of Jupiter in it.

“The Maccabees, who restored the independence of their country, rescued it from the heathen, but a contest between their descendants gave the Romans an opportunity for interfering, and Pompey made himself

\* Zech. i. 17, viii. 8, xii. 5 (marg. reading), 6, xiv. 11, 21.

† Joshua xv. 63, xviii. 28; Judges i. 8.

master of the capital, which he surnamed Hierosolymarius. Judaea, revolting from the Roman yoke, was besieged by Titus, captured, and totally destroyed in the year of our Lord 70, when 97,000 persons were taken prisoners, and 110,000 perished.\* Reflecting on its former beauty, riches, and glory, Titus could not forbear weeping, and cursing the obstinacy of the seditious Jews, who forced him, against his inclination, to destroy so magnificent a city, and such a glorious temple as was not to be paralleled in the whole world. It was again rebuilt by the Jewish nation; but fresh commotions breaking out, Adrian expelled every Hebrew, and made it death for any of them to enter it. He then began a new city on the ruins of the old, which is supposed to be the present one. But it was Constantine and his mother Helena who had the honour of restoring here the worship of the one living and true God. The caliph Omar, the third in succession from Mahomet, was its next conqueror. In the year 1099, it was again taken by Godfrey of Bouillon in the great crusade, when the standard of the cross was triumphantly displayed upon its walls, and it again became the capital of a kingdom; though Godfrey, when offered the diadem, refused it, declaring that he would never receive a crown of gold in that city where the Saviour of the world had worn a crown of thorns! . . . In 1217 this monarchy was abolished, and since this period the 'city of the Lord' has remained the capital of a Mahometan province.

" . . . The capital of Judaea has passed under various denominations. . . . In the first place, it is supposed to be compounded of two appellations, Salem, or Peace, and Jebus,† afterwards changed to Jerusalem. Some suppose it signifies 'Fear Salem,' because the city was very strong; others, 'They shall see Peace'; and many, with a greater degree of probability, say it means 'The Inheritance of Peace.' In the sacred page we find it called the city of David, the city of God, the holy mountain, the holy hill, the throne of the Lord, and the house of the Lord God of Israel, the city of the great King, the throne of Judgment, the throne of the house of David, a place for the Judgment of the Lord, and for matters of controversies, the city of Truth, the city of Joy and a Defence, his Tabernacle; ‡ by the Hebrews, Jeruschalem; the Greeks and Romans, Hierosolyma; and the Mahometans name it Kuddish, or the Holy, and also the Lady of Kingdoms."—RAE WILSON'S *Travels*, i. 198—202.

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#### ASPECT OF THE COUNTRY ABOUT JERUSALEM.

WHEN drawing near Jerusalem from the valley of Elah, Mr. Paxton observes:—"We passed a district where an immense quantity of stone had been quarried and removed; the refuse stone lay in piles, and the excavations showed that large quantities had been procured. The face of the high ridge, or kind of table-land, over which we now passed, was almost wholly destitute of vegetation. A few thistles and an occasional small thorn-bush might be seen; but a more naked district I had not seen in the Holy Land. Several miles to the right I saw a hill or hills pretty well covered with trees of some sort—olives, I thought from their looks; and at a greater distance on our left I saw several patches of trees on the

\* Isaiah ii. 17; Jer. xxv. 15.

† 1 Chron. xi. 4.

‡ See Dan. ix. 16; Ps. xcix. 8, xlvi. 2; Matt. iv. 5; Neh. xi. 1; Ezra i. 3; 2 Chron. xix. 8; Deut. xvii. 8; Zech. viii. 3; Isa. xxii. 2.

side of a high and long ridge, and a small village or two near them ; but more immediately about me, and over the whole face of the ridge which I was passing, all was naked, all was destitute of vegetation, except a small enclosed spot. I was struck, not only with the absence of vegetation, but with the enormous quantity of rough rock that almost literally covered the face of the ground. Much of it lay in irregular patches, projecting from eighteen inches to five or six feet above the little earth that could be seen. It really appeared as if the district was *given up* to be *occupied by rocks*, to the exclusion of all other matter."—LAXTON, p. 112.



MOUNT MORIAH.

"On reaching the rocky heights of Beer," (writes Mr. Jowett, travelling towards Jerusalem,) "the country began to assume a more wild appearance. Uncultivated hilly tracts, in every direction, seemed to announce that not only Jerusalem, but its vicinity for some miles round, was destined to sadden the heart of every visitor. Even the 'stranger that shall come from a far land,' it was predicted,\* should be amazed at the plagues laid upon this country ; and this became more than ever literally fulfilled in my feelings as I drew near to the metropolis of this chosen nation. Expectation was indeed wrought up to a high pitch as we ascended hill after hill, and beheld others yet more distant rising after each other. Being apprehensive lest I should not reach the city gate before sunset, . . I repeatedly desired the guides to ask the Arabs whom we met, how far, or, according to the language of this country, how many hours, it was to Jerusalem ? The answer we received from all was, 'We have been at the prayers at the mosque of Omar, and we left at noon ;' to-day being the Mohammedan sabbath. We were thus left to calculate our distance. The reply sounded very foreign to the ears of one who knew that formerly there were scenes of purer worship on this spot. 'Thither the tribes go up, the tribes of the Lord, to the testimony of Israel, to give thanks unto the name of the Lord.' At length, while the sun was yet two hours high, my long and intensely interesting suspense was relieved. The view of the city burst upon me as in a moment ; and the truly graphic language

\* Deut. xxix. 22.

of the Psalmist was verified in a degree of which I could have formed no previous conception. Continually the expressions were bursting from my lips—‘ Beautiful for situation ; the joy of the whole earth is Mount Zion ! —They that trust in the Lord shall be as Mount Zion, which cannot be removed, but abideth for ever ! —As the mountains are round about Jerusalem, so the Lord is round about his people, from henceforth, even for ever !’

“ Among the vast assemblage of domes which adorn the roofs of the convents, churches, and houses, and give to this forlorn city an air even of magnificence, none seemed more splendid than that which has usurped the place of Solomon’s Temple. . . . A more soothing part of the scenery was the lovely slope of the Mount of Olives. . . . As we drew nearer and nearer to the ‘ City of the great King,’ more and more manifest were the proofs of the displeasure of that great King resting upon His city. Like many other cities of the East, the distant view of Jerusalem is incomparably beautiful, but the distant view is all. On entering at the Damascus gate, meanness, filth, and misery, not exceeded, if equalled, by anything which I had before seen, soon told the tale of degradation. ‘ How is the fine gold become dim ! ’ I went onward pitying everything and everybody that I saw.”—JOWETT’s *Researches*, pp. 206—208.

“ Viewed from a distance, Jerusalem presents a most imposing aspect, and you are struck with its apparent grandeur and extent; but on entering it, all your expectations of magnificence are disappointed. It might be laid in ruins by a few pieces of artillery. . . . Within the walls, ruins, wretchedness, desolation, narrow streets, miserable (shops), with a few relics of sculpture, seem to constitute all the evidence of its former grandeur ; and its inhabitants are most filthy in dress and general appearance.”



VIEW IN JERUSALEM.

“ One circumstance struck me forcibly, viz., the husbandman being busily occupied in the operations of the plough along the hill of Zion ; most remarkably exhibiting, at the present day, the fulfilment of the prophecy uttered first by Micah, and afterwards quoted by Jeremiah, ‘ Zion shall be ploughed as a field.’ ”—JOWETT, p. 262.

Having alighted at a small village on the Mount of Olives, Mr. Jowett thus describes the view of Jerusalem from it:—"Sheltering ourselves beside one of the olive-trees from the west wind, which blew sharply, we enjoyed a fuller prospect of the city, every part of which lies plain before the view from this eminence. The whole of Jerusalem seems like one continuous hill, standing out singly from the midst of the surrounding mountains. To the north, east, and south, it is surrounded by the deep valley, which, in its various parts, has, at different times, borne the names of the Brook of Cedron, the Valley of Jehoshaphat, Tophet, and Gehinom. On the west, the ground adjacent to the walls is, comparatively speaking, level ground; but these walls, on the western part, take in a considerable number of habitations which did not belong to the city, and did not, in fact, exist in the most ancient times. They include Bezetha and Mount Calvary. Bezetha was added in the time of Herod and Pilate; and Mount Calvary, which now groans beneath the weight of monastic piles, was probably open ground, cultivated for gardens,\* at the time when He who suffered without the gate,† there poured out his soul unto death. It is not difficult to conceive, observing from this spot the various undulations and slopes of the ground, that when Mount Zion, Aera, and Mount Moriah constituted the bulk of the city, with a deep and steep valley surrounding the greater part of it, it must have been considered by the people of that age as nearly impregnable. It stands '*beautiful for situation!*' words which have perpetually burst from my lips as I have surveyed all the surrounding scenery, and this unique, crowning centre of the whole. It is indeed '*builded as a city that is compact together.*‡ 'The kings of the earth, and all the inhabitants of the world, would not have believed that the adversary and the enemy should have entered into the gates of Jerusalem.'§ This was said nearly two thousand four hundred years ago; and when, 650 years after, Titus besieged and took this devoted city, he exclaimed, on viewing the vast strength of the place, 'We have certainly had God for our assistant in this war; and it was no other than God who ejected the Jews out of these fortifications; for what could the hands of men, or any machines, do towards overthrowing these towers?'"—JOWETT'S *Christian Researches, &c.*, pp. 254—256.

Mr. Jowett thus relates his departure from Jerusalem:—"At half-past eleven o'clock we passed the Damascus gate of the city; and in half an hour reached the top of the hill, from which I had caught the first view of Jerusalem on my arrival, and from which I was now to see it for the last time. While the servants went on, I rode to a fair green spot, and turned my horse's head round, that I might enjoy a few moments' solitary meditation on the view before me. . . . I must bid farewell to Jerusalem. The noon-day sun shines strong and bright upon the city, and seems to mock its base condition. What a contrast between its aspect at this distance, and its actual state! Here, the smaller objects not being minutely discernible, the glowing strains of David seem as true and lively as they were when they first answered to the touch of his instrument of ten strings. 'Beautiful for situation, the joy of the whole earth, is Mount Zion.' Still there seem to be her towers, her bulwarks, and her palaces, challenging our admiration. But I have now, for more than twenty days, known that these are not the towers nor the temple of ancient times. At every step, coming forth out of the city, the heart is reminded of that pro-

\* John xix. 41.

† Heb. xiii. 12.

‡ Ps. cxxii. 3.

§ Lam. iv. 12, B.C. 588.

phecy, accomplished to the letter, ‘*Jerusalem shall be trodden down of the Gentiles.*’\* All the streets are wretchedness ; and the houses of the Jews more especially (the people who once held a sceptre on this mountain of holiness) are as dunghills. While I gazed, my eyes filled with tears, till I could look no longer. . . . ‘Lord, how long !’—JOWETT’s *Christian Researches*, pp. 269—271.

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PERSEVERANCE UNDER DIFFICULTIES.



BOULTON AND WATT’S FACTORY.

JAMES WATT.

THE same age which produced William Herschel produced also James Watt. While the former was directing his observations to the motions of the heavenly bodies, and making new discoveries in our celestial globe, the latter was devoting his attention to the study of sublunar things, and pursuing inventions which were to change materially the social state of our own planet.

James Watt, by whom the steam-engine was first brought to a state of practical efficiency, was born just two years before Sir William Herschel, and died three years before him, A.D. 1819, having reached the age of eighty-four : a proof, in both cases, that a life of study and labour, if a virtuous and temperate one, need not wear out the bodily frame.

The health of Watt, in his childhood, was so exceedingly delicate, that he could not be sent to school ; and during his life he suffered from a

\* “The author would here add, that he has, subsequently, very often meditated on that phrase ; and he can with truth affirm, that no expression could have been invented more descriptive of the visible state of Jerusalem than this single phrase, *trodden down*, furnished by the most lively and descriptive of all writings extant, the Bible.”

weakly constitution, although energy and perseverance forbade him to yield to its influence. At six years of age he was seen lying on the hearth apparently playing with a bit of chalk he had in his hand. A friend who came to visit his father was annoyed at seeing the boy so idle, and told his father that he ought to send him to school, and not suffer him to trifle away his early years in such a manner. The father whispered a request that he would observe what his son was doing with the chalk; and the gentleman, bending over the hearth, found the boy had drawn mathematical figures there, and was trying to solve a problem. He had been taught to read, but he seldom learnt lessons. He made good use of the knowledge he gained, and even while a child acquired a vast deal of that general information which in after life made his company and conversation so entertaining and useful. He early showed a taste for mechanics; and his father wisely consulted it in making him a present of a set of tools, with which he contrived to make a number of toys, and even an electrifying machine. Thus in his boyhood was the genius manifested which his riper years so largely displayed.

It has been within the present half-century that the wonderful power of steam has been very extensively employed to supersede human labour in most departments of trade and manufacture. Within the same period it has been still more astonishingly applied to locomotive purposes, the use of which has already produced a prodigious effect on society by facilitating the intercourse of nations, as well as individuals.

But though the practical use of this great power is so modern, the knowledge of the power itself is not so. It was included in the wisdom and learning of the Egyptians, in which Moses was said to be skilled, and of the extent of which recent discoveries have enabled us to form an idea. Scientific authors have supposed that even the paddle-wheel, so lately brought into use among modern nations, was known to that singular people, as well as to the Romans; and some assert that from very ancient times attempts were made to propel vessels by steam.

A specimen, or model, of a toy steam-engine was described by a Greek of Alexandria more than a century before the Christian era; and this possibly afforded hints to many later inventors. The subject, dropped, or unheard of from time to time, appears to have been again and again taken up by scientific minds, which, unfortunately for their possessors, were in advance of their age, and were not understood, if not actually persecuted, by their more ignorant contemporaries. About the era of the Reformation a Spaniard exhibited a model steam-vessel to the Emperor Charles V.; but the age for steam experiment had not yet arrived.

It is to their countryman, Salomon De Caus, that the French ascribe the honour of inventing the steam-engine, while they yield to our James Watt the merit of bringing it nearly to perfection, and rendering steam-power, as a moving force, applicable, so extensively, to practical purposes.

The history of De Caus is a melancholy one. He, too, lived before the age to which his genius was suited. It is only since the power of steam, as a moving force, has excited the attention of scientific Europe, and its utility been tested, that the discoveries of De Caus, about two hundred and fifty years ago, have become generally noticed.

In the reign of King James II. Salomon De Caus was brought over from Normandy to Richmond near London, and employed in forming water-works, fountains, grottoes, &c., in the garden of a palace for the Prince, afterwards Charles I. The Elector of Bavaria afterwards engaged

his services ; and in Germany he published a work descriptive of his invention of a method of raising water by partially heating it, so that a portion of the fluid should be converted into steam, and by its expansive force drive the remainder through a tube prepared to conduct it to a reservoir.

The steam machine, however, which he described, is considered as little more than a toy, which might suggest ideas to other inventors. Unhappily for himself, this man of genius, of whom France is now justly proud, returned thither to give his country the benefit of his supposed inventions. He had then distinguished himself as an engineer, a painter, and an architect ; but whether his inventions and scientific studies had really turned his brain, or that persons incapable of comprehending them believed him to be mad, for no other reason than that they could not understand him, cannot be certainly known. His claims as an inventor, or a discoverer of steam-power, met with no attention ; but his zeal in soliciting the patronage of the great and formidable Cardinal Richelieu, the powerful minister of Louis XIII., was the means of consigning him to the most dreadful doom that could have been inflicted on a living creature.

The Bicêtre was a place of confinement in France for real or supposed lunatics ; and one, the cruelties of which were so great, that the darkest threat which could be uttered was that of sending a person to the Bicêtre.

A letter written in the year 1641, by a celebrated lady of Paris, gives a fearful account of the unhappy De Caus, and affords us a very gloomy prospect of the nature of the times to which it relates. Before quoting it we may observe, that the Marquis of Worcester was himself a lover of the pursuits to which the unfortunate Frenchman fell a victim. The following is an extract from the letter referred to :—

“ I have been doing the honours of Paris to your English lord, the Marquis of Worcester. He leads me from curiosity to curiosity ; selecting always the most sad and serious, speaking little, listening attentively, and fixing on those he questions two great blue eyes, which seem to penetrate to the bottom of their thoughts. Besides, he is never content with the explanations that are given to him ; he does not take things on the side they are shown to him. For instance, in a visit we have just made to the Bicêtre, in a madman he thinks he has discovered a man of genius. If the madman had not been furious, I believe your Marquis would have demanded his liberation, taken him to London, and listened to his ravings from morning to night.

“ As we were traversing the madmen’s court, and whilst I, more dead than alive, so frightened was I, clung to my companion, a hideous face showed itself behind the bars, and began to cry in a hollow voice—‘ I am not mad !—I have made a discovery which would enrich my country.’

“ ‘ And what is his discovery ? ’ said the marquis to the keeper who showed us the house.

“ ‘ Ah ! ’ said the man, shrugging his shoulders, ‘ something simple enough ! You could never guess it,—it is the use of the steam of boiling water ! ’

“ I began to laugh. ‘ This man’s name is Salomon De Caus,’ said the keeper. ‘ He came from Normandy four years ago to present to the king a treatise on the marvellous effects which might be obtained from his invention. According to him, with steam you might turn mills, make carriages go, and perform a thousand miracles. The cardinal dismissed the fool without listening to him. Without being discouraged he set about following the cardinal everywhere, who, weary of finding him for ever at

his heels, and of being importuned by his follies, ordered him to be confined in the Bicêtre, where he has been shut up for three years and a half; he calls to every visitor that he is not mad, and that he has made a wonderful discovery. He even composed a book on the subject, which I have.'

"My Lord of Worcester, who had become quite thoughtful, asked for the book. After reading some pages, he said, 'This man is not mad; and in my country, instead of shutting him up, we should have loaded him with riches. Lead me to him: I wish to question him.'

"He was conducted to the cell; but returned sad and thoughtful.

"'Now indeed,' said he, 'he is mad: misfortune and suffering have driven away his reason for ever. But when you cast Salomon De Caus into this dungeon, you cast there the greatest genius of your age. Therenpon we departed, and from that time he talks of nothing but Salomon De Caus.'

At that age a love of science often proved a dangerous gift. Its votaries, by superior knowledge, or curious experiments, ran no small risk of incurring suspicion of sorcery or magic, which subjected them to severe persecution, if not to a cruel death.

The Marquis of Worcester succeeded De Caus in the path of invention and steam discovery. He published his account of these in the year 1663. Lord Brougham remarks that "he undoubtedly made one step in advance of De Caus towards the use of steam-power."

Lord Worcester described one of his inventions as "an admirable and most forcible way to drive up water by fire;" spoke of his "stupendous water-commanding engine," and declared his intention of having his model buried with him. It is presumed that his engine was constructed on a large scale, as the funnel was represented by a cannon.

No practical benefit, however, was derived from the inventions he described, or the scientific experiments he made. The time to favour such operations had not then arrived.

About thirty years afterwards a Frenchman, named Papin, settled in London, and made a digester, which is still called by his name. His experiments and researches into the power and use of steam produced several important additions to the knowledge thus slowly accumulating. The invention of the safety-valve, applied to steam-engines, is ascribed to Papin, although it is supposed that he never made any steam-engine himself.

The French, in general, claim the honour of being inventors, and yield to the English the merit of being improvers, or imitators. Eight years after the publication of Papin's work on steam-power, Captain Savary made some improvements on the apparatus he described; and in the year 1711, two men of humble station, Newcomen, an ironmonger, and Cawley, a glazier, of Dartmouth, constructed a steam-engine on the principles described by Papin, and with some improvements suggested by Savary. This engine could be used in raising water from mines; and thus the first practical use of steam-power was achieved by them, although it is said that atmospheric pressure, and not steam, was its moving force. Brighton and Smeaton made further improvements in the steam-engine. Thus were the scientific efforts and genius of different ages and countries combining together, until the grand improver of the steam-engine appeared, and nearly completed the object for which they had all united.

Lord Brougham says, that "previous to the time of Watt, not only had no means ever been found of using steam-power for any purpose but that of drawing up water, but even in that operation it was defective, and very expensive. . . The great consumption of fuel it required was its chief

defect; the other imperfection was its loss of all direct benefit from the expansive force of the steam itself. That element could only be used in creating a vacuum; and an air-pump might have done as much, had it been worked by water or by horses. It was, in the strict sense of the word, an air and not a steam engine." At such a period of steam-history James Watt was a mathematical instrument-maker in the town of Glasgow. At that time there were a number of eminent men Professors at the University. The Glasgow Body of Arts and Trades had refused Watt permission to follow his calling in their city, as he was not a freeman of their guild. He was denied the use of a small workshop; but the members of the University gave him one within its walls, and appointed him their instrument-maker. Some of these works are still preserved as memorials of the workman whose name became so distinguished. One of the eminent men who were then students at that University, Professor Robison, who became his great friend, thus speaks of James Watt when he was a young man in his workshop:—"When I first was introduced to Mr. Watt, I saw a workman, and expected no more; but was surprised to find a philosopher, as young as myself, and always ready to instruct me. . . . Whenever any puzzle came in the way of us students, we always went to Mr. Watt." All this time Watt was devoted throughout the day to his business; it was only late in the evening, or at night, that he prosecuted his studies; and while he suspended his trade to give assistance or information to the young students who sought for either, he did not suffer his love of reading, or philosophical research, to interfere with the daily labours on which his living depended. There chanced to be among the apparatus by which the Professor of Natural Philosophy illustrated his lectures in the University, a model of the steam-engine made by Newcomen and Cawley, and known as Newcomen's engine. This little engine, from some defect in the workmanship, did not act properly, and it was sent to Mr. Watt to be set to rights. To this apparently trivial accident the civilized world is perhaps indebted for the discoveries and improvements made by James Watt with respect to the use of steam. The defects in the construction of the engine engaged his attention, and these observations led him to make a variety of experiments upon steam. In the University he had witnessed the experiments on heat made by Professor Black, and had learned from him the true cause of evaporation and condensation. When, therefore, he began to experiment upon the mechanical application of steam, he possessed the advantage of thoroughly knowing the principles on which its changes and action depended. His own experiments now put him in possession of the causes which determine the rapidity of evaporation, the proportion which it bears to the surface exposed to the fire, the effects of pressure on the boiling point, the quantity of fuel required to convert a given quantity of water into steam—circumstances which had hitherto been vaguely understood, and generally examined, but which he now reduced to mathematical precision.

Continuing his experiments and labours with patient perseverance, he soon arrived at the conviction that one-fourth (or one quarter) of the fuel consumed by Newcomen's engine would be sufficient to work one with his improvements; and finally, before two years had quite expired from the time when the model engine was sent to him to be repaired, Watt had formed one on a nearly new plan, which he was satisfied was "of incalculable power, universal application, and inestimable value." "His investigations," says an eminent scientific Frenchman, "might have occupied the lifetime of a laborious philosopher, while Watt brought his numerous and

difficult researches to an end without ever suffering them to interfere with the daily labours of his workshop."

"One would expect," adds the same writer, Monsieur Arago, "that such an engine would at once supersede, as a draining machine, the very expensive one of Newcomen; but this was not the case." The reason was, that Watt had not money to bring out his invention himself in such a way as would recommend it to the public, or to secure his right in it by taking out a patent before he made it generally known. For a considerable time it consequently lay useless, while the inventor was employed as an engineer in the grand works then carrying on in Scotland.

After many disappointments, much patient waiting, and at the same time diligent labour in occupations which were not shut out from him by the obstacles that prevented the employment of his steam-engine, Mr. Watt finally formed, in the year 1774, a partnership with a rich proprietor of an iron foundry, Mr. Boulton of Soho Foundry, near Birmingham. From that time his career was open; he could command money, which was necessary to make his invention known; and these inventions, when known, made money in return. Newcomen's imperfect and expensive engine was quickly put out of use, and that of Watt was employed in all mining districts. The agreement made with those who employed these new engines was, that they should pay to the inventor a third part of the value of the fuel saved by their use in the place of those of Newcomen's. The value of the inventions of Watt, in point of saving alone, can be judged of by the astonishing fact, that the proprietors of one mine in Cornwall paid him 2,400*l.* for each engine, in one year, as a compensation for a third of the coal saved by their employment.

The facility thus afforded to mining operations, and the greater economy with which they could be carried on, naturally gave a considerable impulse to such works. The use of the steam-engine was at first confined to mines, and chiefly for the purpose of raising the water. Watt, however, did not rest satisfied with its achievements in this way; a mind like his could not be content to stop short while so much was yet to be done. His steam-engine was at work, and remunerated his labours well; but there were many improvements to be made in it. He continued his investigations, his labours and inventions, until he had discovered the secrets necessary for increasing the power of steam-engines to the highest degree. "But power," Monsieur Arago wisely observes, "is not the only element of success in works of industry. Regularity of action is of no less importance." Watt produced this mechanical regularity of action in the steam-engine by the invention of the apparatus appropriately termed "the governor," which regulates the quantity of steam admitted from the boiler to the cylinder. By the means of this, and other curious inventions, that astonishing engine could now work any sort of machinery, even the most delicate; it could spin cotton, as well as cut bars of iron and brass; it could grind corn, and print books; it could be brought to form the wheels of a watch, give movement to a time-keeping clock, spin a thread almost too fine for sight, or make the earth appear to tremble to its sound, as it performed its giant works.

"It is this regulator of Watt's," says the distinguished author before quoted, "and a skilful employment of fly-wheels, which constitute the true secret of the astonishing perfection of the manufactures of our epoch. It is this which confers on the steam-engine a working movement which is totally free from irregularity, and by which it can weave the most delicate fabrics,

as well as communicate a rapid movement to the ponderous stones of a flour-mill."

In 1809 the fertility of his inventive powers was shown by a beautiful solution of a difficult problem laid before him by a water company at Glasgow, who, after establishing their works upon one side of the river Clyde, discovered that water of a very superior quality might be procured from a kind of natural filter on the other side, if they could overcome the difficulty of laying a main from their pumps across the bed of the river. Watt contrived for this purpose a flexible iron pipe, the pieces of which were connected by a kind of ball-and-socket joint, of which he took the idea from the tail of a lobster. The main was constructed from his designs in the following year with the most complete success; and it forms a tube of about a thousand feet long and two feet in diameter, capable of bending and applying itself to the bed of the river.

Mr. Watt made many other discoveries which justly entitle him to the character of a natural philosopher and a man of science. We may conclude this slight sketch with the following extract from a description of the man of whom Scotland may be justly proud, given by his countryman and friend, the late Lord Jeffrey:—

"Independently of his great attainments in mechanics, Mr Watt was an extraordinary, and in many respects a wonderful man. Perhaps no individual of his age possessed so much, and such varied and exact information: had read so much, or remembered what he had read so well. He had infinite quickness of apprehension, a prodigious memory, and a certain rectifying and methodising power of understanding, which extracted something precious out of all that was presented to it. That he should have been minutely and extensively skilled in chemistry and the arts, and in most branches of physical science, might have been conjectured; but it could not have been inferred, from his usual occupations, that he was curiously learned in many branches of antiquity, metaphysics, medicine, and etymology, and perfectly at home in all the details of architecture, music, and law. He was well acquainted, too, with most of the modern languages, and familiar with their recent literature. His astonishing memory was aided no doubt by a higher and rarer faculty;—by his power of digesting and arranging in his mind all the valuable information he received, and of casting aside and rejecting, as it were instinctively, whatever was worthless or immaterial."

The mention of music among these acquirements leads us to quote another passage from a different writer. The noble biographer of Mr. Watt thus speaks on that subject:—"He had no ear for music: not only was he insensible to its charms, but he could never distinguish one note from another; yet he undertook (in his younger days) the construction of an organ; and the instrument he made not only had every mechanical merit, but produced the most admirable harmonic results, so as to delight the best performers."

He overcame the difficulty which nature appeared to have thrown in his way in this respect by surpassing industry and perseverance, and by practising a theory then little understood, and only contained in a work at once profound and obscure, "Smith's Harmonics." Watt, while yet little known to fame, made a guitar for a young lady, for which he received in payment five guineas.

One peculiarity of his manner is mentioned. "There was a little air of affected testiness, and a tone of pretended rebuke and contradiction, with which he used to address his younger friends, that was always felt by them

as an endearing mark of kindness and familiarity, and prized above all the solemn compliments that ever proceeded from the lips of authority. His voice was deep and powerful, though he commonly spoke in a low and somewhat monotonous tone, which harmonized admirably with the weight and brevity of his observations, and set off to the greatest advantage the pleasant anecdotes which he delivered with the same grave brow and calm smile playing soberly on his lips."

• Lord Jeffrey further says that Mr. Watt "had in his character the utmost abhorrence for all sorts of forwardness, parade, and pretension; and, indeed, never failed to put such impostors out of countenance, by the manly plainness and honest intrepidity of his language and deportment." His great countryman, Sir Walter Scott, thus speaks of him:—

"Amidst this company stood Mr. Watt, the man whose genius discovered the means of multiplying our national resources to a degree perhaps beyond his own stupendous powers of calculation and combination; bringing the treasures of the abyss to the summit of the earth,—commanding manufactures to arise,—affording means of dispensing with that time and tide which wait for no man,—of sailing without that wind which defied the commands and threats of Xerxes himself. This potent commander of the elements—this abridger of time and space—this magician, whose cloudy machinery has produced a change in the world, the effects of which, extraordinary as they are, are perhaps only now beginning to be felt—was not only the most profound man of science, the most successful combiner of powers and calculator of numbers, but one of the best and kindest of human beings. . . . In his eighty-first year, the alert, kind, benevolent old man had his attention ready for every one's question, his information at every one's command."

Mr. Watt died peacefully at his residence in Staffordshire, on the 25th of August, 1819, in his eighty-fourth year.

The prime minister of the time, Lord Liverpool, presided at his funeral; and the late lamented Sir Robert Peel expressed the obligation under which he lay to the genius of him whom they were then commemorating,—the fortunes of his family being raised by manufacturing industry, founded on the happy inventions of Arkwright and Watt.

A fine statue of Watt, executed by Chantry, stands in Westminster Abbey, with an inscription written by Lord Brougham. Several statues have been erected to him in various places: among others, there is one in the cemetery of Père la Chaise, at Paris.

Among other useful inventions of which Watt was the author, we must not forget the machine for copying letters, &c., so usefully employed by clerks in offices, and another for taking copies of sculptures, busts, &c. He also devised the method of heating buildings and hot-houses by steam; and he was the first who discovered the real nature of water, or the elements of its composition.

His grand inventions, however, relate to steam and the steam-engine; and in so briefly noticing his life and labours, we glanced no less briefly over the history of that wonderful power previous to his time.

It is a curious fact, that steam is no less than one thousand seven hundred and twenty-eight times greater in bulk than the water from which it was formed. The object of the steam-engine is to catch the water expanding into steam, and to make use of that expansive force, which is about eight times greater than the expanding force of gunpowder.

Whatever knowledge may have existed on this subject, even from very early times, it was Watt alone who fully reduced the theory to practice.

## NO WEATHER SENT IN VAIN.



"IF we have no rain in less than eight-and-forty hours," exclaimed Mr. Dobson, the proprietor of a small farm in one of the eastern counties, "there will not be a turnip to be seen. Twice did I sow this field with the best seed I could get, and if I had sown it a third time it would have been to no better purpose, unless we have a change of weather directly."

He said the same words the next morning, and that, too, in a tone of increased vexation. He viewed the clouds, consulted his "glass," which was never known to err: it stood at Fair, the point it had maintained for several days; and when he gently tapped it with his knuckles, the index refused to move, or, if there was any variation, it inclined towards a higher point. He watched anxiously whether the swallows flew near the ground, or otherwise; inquired whether the dew rose heavily the previous evening; what appearance the moon presented at the change, whether she lay on her back or not—the certain indication of rain in his opinion—but in vain; disappointment followed equally his own observations and the replies of others. He did not, indeed, openly give vent to his dissatisfaction, or express the almost reproachful thoughts that lurked in his heart; but any one at all acquainted with him would have been at no loss to account for the unusual ill-humour he displayed, and to attribute his irritation to the idea of the total failure of his crop of turnips.

In this unenviable state of mind, as he was riding home in the evening, he overtook a person who hired a farm adjoining his own, an honest and industrious man, with a large young family entirely dependent upon him, and who was not, like himself, in easy circumstances. He had never been "well-to-do," and had often been unfortunate where others had been successful. The usual expression of his countenance was careworn and dejected. This evening it was the very reverse. His manner, too, was entirely different. He was animated and cheerful; and, instead of the mere "good night," or "good morning," interchanged between them, Marsh—for that was his name—seemed even inclined to enter into conversation.

"Bad weather this for us farmers," observed Mr. Dobson, again casting his eyes anxiously round the horizon. "There is no more appearance of rain this evening than there was ten days ago. I shan't have a dozen

## THE HOME FRIEND.

turnips in my ten acres. I was in hopes we should have had a soaking rain both yesterday and to-day, but it has all passed off."

"Heaven be praised that we had not!" fervently ejaculated Marsh. "I should have been ruined if we had had the soaking rain you speak of."

"How so?" inquired Dobson. "O, by the by, I saw you busy with your mustard seed, so I did."

"Yes," returned Marsh. "It was a great venture. All things lately have gone very hard with me. I lost both lambs and ewes in the spring, and my rent"—he sighed and shook his head, then cheerfully continued—"I had been strongly advised to sow that field near yours with mustard. I yielded, because I valued the opinion of him that gave it; but I did so with a trembling heart, for you know what a precarious crop it is. The seed came up beautifully. There never was a better promise. It was getting ripe, but I really had not the courage to cut it. 'Come, come,' said Clarke, 'we must not dally any longer in this way. Never be afraid. You shall see me and my whole party the day after to-morrow, men, women, and children, tarpauling and all.' If I had chosen the weather to suit me, it could not have been more favourable. Not a drop of rain, as you know, has fallen upon it; it has been cut, threshed, and safely lodged, all in a few hours, in the finest condition. The price is high, the quality is excellent, and I shall now overcome all my difficulties. O, Mr. Dobson, if rain had come and spoilt my crop, my children would have been without a home, and my wife and I beggars!"

Dobson was a kind-hearted man, and a sensible one too. He was thoughtful for a few instants, and then, every feature lighting up with a genuine expression of pleasure, he exclaimed, "I am glad to hear it, Marsh; right glad to hear that you are straight again. Now I'll own the truth. I grumbled at this fine weather, and was so cross yesterday I could have quarrelled with a straw for lying in my way, fancying myself a better judge of what weather was proper for us than He who sent it. And now what is the consequence? That which has only injured me partially, has been of the utmost service to you. Yes, yes, it is wisest and safest too, to let God govern his own world as he sees fit; for come what weather it may, it must needs suit some; and sure enough no one is forgotten or overlooked in the right time, and when his turn comes round."

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### MAN THE WORK OF AN ALMIGHTY CREATOR.

CAN any man, endowed with common sense, imagine that such a body as any of us doth bear about him, so neatly composed, fitted to so many purposes of action, furnished with so many goodly and proper organs; that eye, by which we reach the stars, and in a moment have, as it were, all the world present to us; that ear, by which we so subtly distinguish the differences of sound, are sensible of so various harmony, have conveyed into our minds the words and thoughts of each other; that tongue, by which we so readily imitate those vast diversities of voice and tone, by which we communicate our minds with such ease and advantage; that hand, by which we perform so many admirable works, and which serves instead of a thousand instruments and weapons unto us; to omit those inward springs of motion, life, sense, imagination, memory, passion, with so stupendous curiosity contrived; can any reasonable man, I say, conceive

that so rare a piece, consisting of such parts, unexpressibly various, unconceivably curious, the want of any of which would discompose or destroy us; subservient to such excellent operations, incomparably surpassing all the works of the most exquisite art that we could ever observe or conceive, be the product of blind chance; arise from the fortuitous jumblings of matter; be effected without exceeding great wisdom, without most deep counsel and design? Might not the most excellent pieces of human artifice, the fairest structures, the finest pictures, the most useful engines, such as we are wont most to admire and praise, much more easily happen to be without any skill or contrivance? If we cannot allow these rude and gross imitations of nature to come of themselves, but will presently, so soon as we see them, acknowledge them the products of art, though we know not the artist, nor did see him work; how much more reasonable is it that we believe the works of nature, so much more fine and accurate, to proceed from the like cause, though invisible to us, and performing its workmanship by a secret hand?—BARROW.

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## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

### HISTORICAL NOTICES OF THE COTTON MANUFACTURE.

WRITERS of antiquity abound in allusions to clothing made of wool and flax; there are, however, but few notices among Greek and Latin writers, and not one among Hebrew writers, referring to cotton. In the old world the growth and manufacture of cotton were confined to those populous regions lying beyond the Indus, which were long unknown to the nations bordering on the Mediterranean; and even in modern times, in the middle ages, continual mention is made of stuffs of woollen, linen, silk, and gold, but cotton remains unnoticed.

Wool was probably one of the first materials used by mankind for cloth. It is mentioned in the Scriptures in connexion with linen, (Deut. xxii. 11; Prov. xxxi. 13); and the manufacture of both these fabrics existed in Greece in the days of Homer.

The arts of spinning and weaving rank next in importance among mankind to agriculture, and must have been invented at a very early period in man's history. They existed in considerable perfection in Egypt, at the time when the Israelites were in bondage in that land. Linen was the national manufacture among the ancient Egyptians. That they were not acquainted with cotton seems

evident, from the fact, that among the numerous specimens of mummy-cloth which have been imported into Europe, no cotton has been found; and there are no paintings of the cotton shrub upon the tombs of Thebes, where accurate representations of flax occur in its different states of growth and manufacture. In India, cotton was probably manufactured at as early a period as linen in Egypt, for Herodotus (who wrote 445 B.C.) speaks of the manufacture among the Indians as if it were in a very advanced state. He says:—"They possess a kind of plant, which instead of fruit produces *wool*, of a finer and better quality than that of sheep; of this the Indians make their cloths." Nearchus, the admiral to whom Alexander intrusted the survey of the Indus, (B.C. 327,) states, that "the Indians wore linen garments, the substance whereof they were made growing upon trees; and this is indeed flax, or rather something much whiter and finer than flax. They wear shirts of the same, which reach down to the middle of their legs; and veils, which cover their head and a great part of their shoulders." Strabo also, on the authority of Nearchus, mentions the Indians as being celebrated for flowered cottons or chintzes, and for their various and beautiful dyes. This geographer states, that in his own day (he died A.D. 25) cotton grew,

and cotton cloths were manufactured in Susiana, at the head of the Persian Gulf. Fifty years later Pliny describes the cotton plant and the stuffs made from it. He says, "In Upper Egypt, towards Arabia, there grows a shrub, which some call *gossypium*, and others *xylon*, from which the stuffs are made, which we call *xylina*. It is small, and bears a fruit resembling the filbert, within which is a downy wool, which is spun into thread. There is nothing to be preferred to these stuffs for whiteness or softness: beautiful garments are made from them for the priests of Egypt." The same author, in his description of the island of Tylos, in the Persian Gulf, enumerates, among its remarkable productions, "wool-bearing trees, with leaves exactly like those of the vine, but smaller, bearing a fruit like a gourd, and of the size of a quince, which, bursting when it is ripe, displays a ball of downy wool, from which are made costly garments resembling linen." Arrian, an Egyptian Greek, who lived in the first or second century, notices the exports from India of calicoes, muslins, and other cottons, both plain, and ornamented with flowers, made in the interior provinces; that Masalia, the modern Masulipatam, was then, as it has been ever since, famous for the manufacture of cotton piece-goods; and that the muslins of Bengal were then, as at the present day, superior to all others, and received from the Greeks the name of *Gangitiki*, indicating that they were made on the borders of the Ganges.

Cottons and muslins gradually came into use in Arabia and the neighbouring countries, and the manufacture was diffused by the commercial activity and enterprise of the early followers of Mohammed. The fabrics called *muskins* received their name from *Mosul* in Mesopotamia; as, in the same way, at a later period, *calico* was named after *Calicut*; and the yellowish brown cotton fabrics, called *nankens*, after the city *Nankin*.

Marco Polo, who visited most of the principal cities of Asia at the latter part of the thirteenth century, notices a manufacture of very fine cotton cloth at Arzingan, in Armenia Major: he states that cotton was abundantly grown and manufactured

in Persia and all the provinces bordering the Indus, and that in all parts of India this was the staple manufacture. He also notices, that in the province of Fokien, in China, cottons were woven of coloured threads, which were carried for sale to every part of the province of Mangi; but that silk was the ordinary dress of the people, from the prince to the peasant. The cotton plant first began to be cultivated for common use after the conquest of the empire by the Tartars; a strong resistance was made to its cultivation by the fabricators of wool and silk, but the opposition was soon put down, because, among all the materials of clothing, cotton was found to be best suited to the torrid zone, and the cheapest material of which cloth could be made; therefore, about the year 1368, the cultivation began to prevail throughout the empire. The Chinese cottons, especially the nankeens, have acquired much celebrity. At the present day cotton is not grown in sufficient quantity for the consumption of that empire, so that it is largely imported from India.

Cotton cloth, of African manufacture, was brought to London from Benin, on the coast of Guinea, in 1590. The cotton tree grows plentifully on the borders of the Senegal, the Gambia, and the Niger rivers; at Timbuctoo, Sierra Leone, in the Cape do Verd Islands, on the Coast of Guinea, in Abyssinia, and throughout the interior. The peculiar fitness of the soil and climate of Egypt prompted the present ruler of that country, a few years ago, to introduce the cotton plant, and in two years he exported no less than 5,623 bales to England. As this cotton was raised from the Georgian Sea-Island seeds, it is called *Sea-Island Egyptian cotton*.

The cotton manufacture was found in a very advanced state in America on the discovery of that continent by the Spaniards. Clavigero states, that "of cotton the Mexicans made large webs, and as delicate and fine as those of Holland, which were, with much reason, highly esteemed in Europe. They wove their cloths of different figures and colours, representing different animals and flowers. Of feathers, interwoven with cotton, they made mantles and bed-curtains, carpets,

gowns, and other things, not less soft than beautiful. With cotton also they interwove the finest hair of the belly of rabbits and hares, after having made and spun it into thread ; of this they made most beautiful cloths, and in particular winter waistcoats for their lords." Among the presents sent by Cortez to Charles the Fifth, were "cotton mantles, some all white, others mixed with white and black, or red, green, yellow, and blue : waistcoats, handkerchiefs, counterpanes, tapestries, and carpets of cotton." Columbus found the cotton plant growing wild in the West India Islands, and on the continent of South America, where the inhabitants wore cotton dresses, and made their fishing nets of the same material.

To Spain belongs the honour of having introduced the cotton manufacture into Europe. The plant was cultivated and manufactured into clothing in Spain as early as the tenth century, about which time it was probably introduced by the Moors. It flourished on the fertile plains of Valencia, where it still grows wild. During some centuries Barcelona was celebrated for the manufacture of cotton sail-cloth and fustians, the latter being a strong fabric used to line garments, and which derives its name from the Spanish word *fuste*, signifying "substance." The Spanish Arabs made paper from cotton before that most useful article was known in Europe. When the Moors were expelled from Spain, the useful arts disappeared with them, and only by slow and laborious efforts were they introduced into other parts of Europe. The cotton manufacture is said to have been introduced at Venice at the beginning of the fourteenth century. Strong cottons, such as fustians and dimities, were made at Venice and Milan ; and it is probable that even those were woven with a linen warp and a cotton weft, as was afterwards the custom in England, from the difficulty at that early period, of making the long, or warp threads, of sufficient strength in cotton to bear stretching in the loom. It is supposed that about this time cotton yarn was imported from Syria and Asia Minor, whence, in later times, the Italians and French obtained that article.

It must not be supposed that the cotton manufacture, as it now exists in England, was borrowed from any other nation. The present manufacture is due entirely to the genius and enterprise of Englishmen ; and during little more than half a century it has sprung into existence, and become a sort of centre to the commercial world. At the early period to which our history refers, the only fabric manufactured in this country was a coarse and heavy article, probably half cotton and half linen, of too little importance to attract much notice ; but calico, muslin, and the more delicate cotton goods, were never made in Europe, except possibly by the Moors in the south of Spain, until the invention of the spinning machinery in England.

At an early period, the fabrics made at Manchester, and some other towns in Lancashire, were for some reason called *cottons*, though they were actually *woollen* or *linen* goods. It has been suggested, that the word *cottons*, at that day, was only a corruption of *coultings*. The first notice on this subject is by Leland, who visited Lancashire in the reign of Henry the Eighth. He says : "Bolton-upon-Moore market standeth most by *cottons* : divers villages, in the moores, about Bolton, do make *cottons*." This apparent proof of the early existence of the cotton manufacture is, however, disproved by an act of Edward the Sixth (1552), entitled, "For the true making of *woollen* cloth ;" in which it is ordered, that all the cottons called Manchester, Lancashire, and Cheshire cottons, shall be of certain specified dimensions and weights, which could by no means apply to cottons, but only to coarse woollens. Camden, speaking of Manchester in 1590, says : "This town excels the towns immediately around it, in handsomeness, populousness, woollen manufactures, market-place, church, and college, but did much more excel them in the last age, as well by the glory of its woollen cloths, which they call Manchester *cottons*, as by the privilege of sanctuary, which the authority of parliament, under Henry the Eighth, transferred to Chester."

It seems impossible to fix the date of the introduction of the cotton

manufacture in England. The earliest actual record on the subject is a work published in the year 1641, called "The Treasure of Traffic," by Lewis Roberts. Speaking of the town of Manchester, he says, "They buy cotton wool in London, that comes first from Cyprus and Smyrna, and at home worke the same and perfect it into fustians, vermillions, dimities, and other stufies, and then return it to London, where the same is sold, and not seldom sent into forraim parts, who have means, at far easier termes, to provide themselfes of the said first materials."

It appears, therefore, that, in the year 1641, the cotton manufacture had become fairly established in Manchester, from which town not only the home trade, but the distant markets of the Levant, were supplied with several descriptions of cotton goods. The linen manufacture still continued to flourish in Manchester, and indeed linen yarn was used as the warp for fustians, and for most cotton goods in this country, down to the year 1773.

Dr. Fuller, who wrote in 1662, says that the inhabitants of Manchester, "buying the cotton wool or yarne coming from beyond the sea, make it here into fustians, to the good empliment of the poor, and great improvement of the rich therein, serving mean people for their outsides, and their betters for the lining of their garments. Bolton is the staple place for this commodity, being brought thither from all parts of the country. As for Manchester, the cottons thereof carry away the credit in our nation, and so they did a hundred and fifty years agoe. For, when learned Leland, on the cost of King Henry the Eighth, with his guide, travailed Lancashire, he called Manchester the fairest and quickest town in this country; and sure I am it hath lost neither spruceness nor spirits since that time. Other commodities made in Manchester are so small in themselves, and various in their kinds, they will fill the shop of a haberdasher of small wares. Being, therefore, too many for me to reckon up or remember, it will be the safest way to wrap them all together in some Manchester ticken, and to fasten them

with the pinns (to prevent their falling out and scattering), or tye them with the tape; and also, because sure bind, sure find, to bind them about the points and laces all made in the same place."

Mr. Baines is inclined to think, that the art was brought from Flanders, by the protestant artisans and workmen who fled from Antwerp on the capture and ruin of that great trading city, by the Duke of Parma, in 1585, and also from other cities of the Spanish Netherlands. "Great numbers of these victims of a sanguinary persecution took refuge in England, and some of them settled in Manchester; and there is the stronger reason to suppose that the manufacture of cotton would then be commenced here, as there were restrictions and burdens on foreigners setting up business as masters in England, in the trades then carried on in this country, whilst foreigners commencing a new art would be exempt from those restrictions. The warden and fellows of Manchester college had the wisdom to encourage the settlement of the foreign clothiers in that tow~~n~~, by allowing them to cut firing from their extensive woods, as well as to take the timber necessary for the construction of their looms, on paying the small sum of fourpence yearly. At that period of our history, when capital was small, and the movements of trade comparatively sluggish, a new manufacture would be likely to extend itself slowly, and to be long before it attracted the notice of authors. That a manufacture might in those days gradually take root, and acquire strength, without even for half a century being commemorated in any book that should be extant after the lapse of two centuries more, will be easily credited by those who have searched for the records of our modern improvements in the same manufacture. If the greatest mechanical inventions, and the most stupendous commercial phenomena, have passed almost unnoticed in a day when authors were so numerous, the mere infancy of the cotton manufacture may well have been without record in an age when the press was far less active."

**EARLY METHODS OF SPINNING.**  
**THE DISTAFF AND SPINDLE.—THE SPINNING-WHEEL.**

Among the ancient Egyptians, who were so celebrated for their fine linen, spinning was a domestic occupation common to all ranks of society; and,

in our own country, up to a very recent period, the spinning-wheel was an ordinary piece of domestic furniture. The term "spinster," applied to unmarried females, shows how universal was the employment of preparing thread or yarn for the



MODERN EGYPTIAN SPINNING.

weaver. Before the invention of the spinning-wheel, the distaff and rock, or spindle, were the simple instruments employed by the spinster. The distaff was a stick or reed, about a yard in length, with a fork or expansion near the top, round which the cotton was wound, being previously prepared by carding or combing. The

distaff was usually held under the left arm, and the fibres were drawn out from the projecting ball, being at the same time spirally twisted by the forefinger and thumb of the right hand. The thread so produced was spun by the turning round of the spindle, and was then wound upon it until the quantity was as great as it



SPINNING WITH DISTAFF AND SPINDLE.

would carry. A fresh spindle was then mounted, and those already loaded with thread were stored in a basket until a sufficient quantity were collected for the weaver.

The spindle was made of a reed, or of some light wood, and was generally from eight to twelve inches in length. At the top was a slit or clasp, for attaching the thread, so that the weight of the spindle might keep it stretched. The lower end was inserted in a whorl or wheel, made of some

heavy material, which served to keep it steady, and to promote its rotation. The spinner every now and then gave the spindle a fresh turn, so as to increase the twist of the thread. When the spindle touched the ground, "a length" was said to be spun, and the thread was taken out of the slit, and wound upon the spindle: the upper part was then inserted in the slit, and a new length commenced. The Roman poet Catullus briefly mentions these particulars:—

"The loaded distaff, in the left hand placed,  
With spongy coils of snow-white wool was graced;  
From these the right hand lengthening fibres drew,  
Which into thread 'neath nimble fingers grew.  
At intervals a gentle touch was given,  
By which the twirling whorl was onward driven.  
Then, when the sinking spindle reach'd the ground,  
The recent thread around its spire was wound,  
Until the clasp within its nipping cleft  
Held fast the newly-finish'd length of woft."

In ancient times the spindle and distaff were frequently made of some precious material, beautifully ornamented. Thus Homer has mentioned the present of a golden distaff being made to Helen; and Theocritus has celebrated the distaff in his twenty-eighth Idyll, on the occasion of a visit to a friend to whose wife he presented an ivory distaff. The poem begins thus:—

"O distaff, friend to warp and woof,  
Minerva's gift in man's behoof,  
Whom careful housewives still retain  
And gather to their household's gain,  
With me repair," &c.

The Hindoos form their distaff of the leading shoot of some young tree, carefully peeled; and for the spindle they select the beautiful shrub *Euonymus*, which has hence obtained the popular name of "the spindle-tree." With these simple implements, and by means of the exquisite touch which the Hindoos possess, are spun those delicate cotton threads from which the celebrated Indian muslins are made.

The use of the spindle and distaff was superseded in England by the spinning-wheel, in or soon after the reign of Henry the Eighth. It was probably introduced from Hindustan, where it had been in use for ages; but domestic legends say, that it was invented by the fairies, or some supernatural power; and, no

doubt, at the time of its introduction, it was regarded as a great discovery in which all classes of society were interested. Two kinds of household wheels have been described as long in use among spinsters; the first is commonly called, in this country, "the big wheel," from the size of its rim, or "the wool wheel," from its being employed in the spinning of sheep's wool. The Saxony, or Leipsic wheel, so called from its German origin, was used for spinning flax, and was an improvement on the old Jersey wheel, as it enabled the spinner to mount two spindles on the same wheel, so as to form a thread with each hand. The worsted wheel was also employed to spin cotton, for which it was equally well adapted; and this it did by two distinct processes. The cotton having been picked and cleaned, was curled or brushed with coarse wire brushes, called *hand cards*: the cotton being spread upon one of these, was combed with the other until the fibres were all disposed in one direction: it was then taken off in soft fleecy rolls, called *curdings*, each about twelve inches long, and three-quarters of an inch thick. These *curdings* were next formed into a coarse thread or *roving*; for which purpose one end of the carding was twisted round the spindle, and the spinner with the right hand turned



HINDOO SPINNING WHEEL.

the wheel which, by means of a band or cord, gave motion to the spindle ; at the same time she drew out the carding to a certain length with the left hand. The motion thus given to the carding twisted it spirally, and extended it in length. It was then wound upon the spindle, another carding was attached to it, drawn out and twisted as before, and thus was formed a continuous coarse thread or roving. By a second and similar operation the roving was stretched and twisted into a fine strong thread, fit to be used as weft. This double process was necessary, because the cardings could not be at once drawn into a level and even thread fine enough for the loom. The preparation of the rovings was called *couse spinning*, and that of the thread *fine spinning*. The roving, which was about the thickness of a quill, being fastened to the spindle, was held firmly between the left fore-finger and thumb, at the distance of about six inches from the spindle ; the wheel was then turned with the right hand, and at the same time the left hand was drawn away about half a yard, by which means the roving was drawn out into weft ; the necessary twist

was then given by a few turns of the wheel ; and, lastly, the thread was wound upon the spindle into a conical shape, called a *pirn* or *cop*.

It has been already mentioned, that the more firm and even thread of flax was used for the warp. This was largely exported from Ireland, Scotland, and Germany. Cotton yarns were mostly spun in the cottages of the peasantry, and gave abundant occupation to the female members of every poor family. The old dame, or the mother, at her spinning-wheel, forms a domestic picture which cannot be remembered without a feeling of regret that it has passed away for ever. It was then the custom for travelling chapmen, with their pack-horses, to go from door to door to purchase the cotton yarn which had been prepared ; but these sources of supply gradually became insufficient to meet the demands of the weaver, who frequently had "to walk three or four miles in a morning, and call on five or six spinners, before he could collect weft to serve him for the remainder of the day ; and when he wished to weave a piece in a shorter time than usual, a new ribbon, or a gown was necessary to quicken the

exertions of the spinners."\* The prices paid to the spinner were often so high as to take away all or most of the profits of weaving. According to Dr. Taylor,† this was the commencement of the system of infant labour; for spinning being found so profitable, every child in the cottage was forced to help in the process. When the father was a weaver and the mother a spinner, the tasks imposed on the children were often cruelly

severe. Indeed, with the one-thread wheel, it was scarcely possible for one person, with the greatest industry, to produce a pound of thread in a day. The goods thus manufactured were strong and coarse compared with those now produced. The thread was very unequal, its evenness depending greatly on the delicacy of touch of the spinster, and it varied with every little difference in the drawing out of the thread, and the turns of the spindle in portions of the same length.

\* Guest, "History of the Cotton Manufacture."  
† "Hand-Book of Cotton, &c. Manufactures."

(*To be continued.*)

### THE RESURRECTION OF THE BODY.

THERE are three bodily inhabitants of heaven, Enoch, Elijah, our Saviour Christ: the first before the law; the second under the law; the third under the Gospel: all three in a several form of translation. Our Blessed Saviour raised Himself to and above the heavens by his own immediate power: He ascended as the Son, they as servants; He as God, they as creatures. Elijah ascended by the visible ministry of angels; Enoch insensibly. Wherefore, O God, hast Thou done this, but to give us a taste of what we shall be; to let us see that heaven was never shut to the faithful; to give us an assurance of the future glorification of this mortal and corruptible part? Even thus, O Saviour, when Thou shalt descend from heaven with a shout, with the voice of the archangel, and with the trump of God, we that are alive and remain shall be caught up, together with the raised bodies of thy saints, into the clouds, to meet Thee in the air, to dwell with Thee in glory.—BISHOP HALL.

### ON THE TOMBS IN WESTMINSTER ABBEY.

MORTALITY, behold and fear,  
What a charge of flesh is here!  
Think how many royal bones  
Sleep within this heap of stones:  
Here they lie, had realms and lands  
Who now want strength to stir their hands;  
Wherefrom their pulpits seal'd with dust,  
They preach—"in greatness is no trust."  
Here's an acre sown indeed  
With the richest, royal'st seed,  
That the earth did e'er suck in,  
Since the first man died for sin:  
Here the bones of birth have cried  
Though gods they were, as men they died:  
Here are wands, ignoble things,  
Dropt from the ruin'd sides of kings.  
Hero's a world of pomp and state,  
Buried in dust, once dead by fate.

F. BEAUMONT.

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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SCRIPTURE TOPOGRAPHY.—THE HOLY LAND.



CÆSAREA.

THE city of Cæsarea (sometimes called Cæsarea Palestina, to distinguish it from Cæsarea Philippi) is frequently mentioned in the New Testament. Here that great and glorious event took place—the admission of the Gentiles into the Church of Christ, when the distinction which had formerly existed between Jew and Greek *openly* ceased—and they became *one* in Christ Jesus. Here Philip resided with his four gifted daughters, and here the prophet Agabus foretold the coming trials of St. Paul. Hence several faithful brethren accompanied that great apostle to the place of his apprehension, and here he returned and dwelt as a prisoner for two years. Here the profligate and guilty Felix *trembled* at his reasoning, and Agrippa was *almost* per-

suaded to be a Christian. And here, lastly, did that fearful judgment come upon Herod, who in this very city, which he had filled with so many wonders, and adorned with such magnificence, died of a loathsome and horrible disease, the punishment of his vain-glorious boasting.

Cæsarea, formerly called Strato's Tower, from a Greek who founded it, was built by Herod the Great, in honour of Augustus Cæsar. It was situated on the eastern coast of the Mediterranean, near the south end of Mount Carmel, thirty-six miles south of Acre, thirty north of Joppa, and sixty-two north-west of Jerusalem. It was a dispute respecting the possession of this city that gave rise to the war with the Romans: the Jews claiming it because it had been built in their own land, and the Greeks because it had been dedicated to the heathen gods.

Cæsarea was inhabited by Jews, Heathens, and Samaritans; hence parts of it were esteemed unclean by the Jews.\* Some would not pass over certain places; others were less scrupulous. Perpetual contests were maintained between the Jews and the Syrians, or the Greeks; on one Sabbath-day, twenty thousand persons were slain here.

The account Josephus gives us of the building of Cæsarea is as follows:— “Now, upon his (Herod's) observation of a place near the sea, which was very proper for containing a city, and was before called Strato's Tower, he set about getting a plan for a magnificent city there, and erected many edifices . . . all over it of white stone. He also adorned it with most sumptuous palaces . . . and, what was the greatest and most laborious work of all, he adorned it with a haven, that was always free from the waves of the sea. . . . It was of excellent workmanship, which was the more remarkable, being built in a place that, of itself, was not suitable to such noble structures, but was perfected by materials from other places, at very great expenses. This city is situate . . . in the passage by sea to Egypt, between Joppa and Dora, which are lesser maritime cities, and not fit for havens, on account of the impetuous south winds that beat upon them . . . So Herod endeavoured to rectify this inconvenience, and laid out such a compass towards the land, as might be sufficient for a haven, wherein the great ships might be in safety: and this he effected by letting down vast stones of above fifty feet in length, not less than eighteen in breadth, and nine in depth, into twenty fathom deep . . . the mole, which he built by the sea-side, was two hundred feet wide, the half of which was opposed to the current of the waves, so as to keep off those waves which were to break upon them . . . the other half had upon it a wall with several towers, the largest of which was named Drusus . . . from the son-in-law of Cæsar, who died young. There were also a great number of arches, where the mariners dwelt. There was before them a quay, or landing-place, which ran round the entire haven, and was a most agreeable walk . . . there were edifices all along the circular haven, made of the most polished stone, with a certain elevation, whereon was erected a temple, that was seen a great way off by those that were sailing for that haven, and had in it two statues, one of Rome, the other of Cæsar. The city itself was called Cæsarea, and was also built of fine materials, and was of a fine structure. Nay, the very subterranean vaults and cellars had no less of architecture bestowed on them than had the buildings above ground. Some of these vaults carried things, at even distances, to the haven and to the sea; but one of them ran obliquely, and

\* This circumstance, no doubt, added to the scruples of the Apostle about going to Cornelius, and gave double force to the announcement that henceforth he was to call no man common or unclean.

bound all the rest together, that both the rain and the filth of the city were together carried off with ease ; and the sea itself, upon the flux of the tide from without, came into the city and washed it all clear. Herod also built thereon a theatre of stone ; and on the south quarter, behind the port, an amphitheatre also, capable of holding a vast number of men, and conveniently situated for a prospect to the sea. The city was thus finished in twelve years, at the sole expense of Herod."

In the description of the march of Titus across the desert of Pelusium, from Egypt to Palestine, with intent to besiege Jerusalem, he is said to have halted at Cæsarea, having taken a resolution to gather all his forces together at that place. And after the memorable siege and fall of this devoted city, "Titus went down with his army to that Cæsarea which lay by the seaside, and there laid up the rest of his spoils in great quantities, and gave orders that the captives should be kept there : for the winter season hindered him from sailing into Italy."

During the long period between this event and the rise of the Mohamme-dan power, no remarkable details are known respecting it ; but it was captured in the seventh century, by the Saracens.

After giving the preceding extracts from the Jewish historian, Mr. Buckingham thus describes the present state of Cæsarea, now a mass of ruins :—

" In examining the ruins of this celebrated spot, we first passed the remains of a building with fine Roman arches, many of which still remained perfect, while other masses of fallen fragments lay scattered beneath them. A little beyond were the remains of another pile, with five or six granite columns fallen into the sea, on the very edge of which these buildings appear to have been originally erected. They appeared to us to correspond, both in situation and form, with the edifices appropriated to the residence of the mariners.

" Ascending from the beach, we saw fragments of white marble, highly polished, and an abundance of broken pottery, of the ribbed or grooved kind, so common amid Egyptian ruins ; and this we conceived to mark the site of the edifices which stood all along the circular haven, and were built of the most polished stone, while the pottery might have been fragments of domestic utensils, or of broken vessels used in the service of the temple that stood there.

" We next came to the principal remains of a large and well-built fort, of an irregular form, laying four sides facing nearly towards the cardinal points, and the western one fronting the sea. On its northern front we observed four pyramidal bastions, with sloping sides, each about forty feet long at the base, twenty at the top, fifteen feet thick in the centre, and from twenty to twenty-five feet in perpendicular height. They were separated from each other by a space of twice their own length, which was occupied by the main wall of the fort, excellently built ; and near the centre, within the wall, we saw the remains of a large building, with the arched gateway of a passage through it.

" On the eastern front, which is of greater extent than the northern, were ten similar bastions, including both of those at the angles. Opposite to the fourth, from the north-east angle, we observed a well, and looking down into it, saw distinctly an arched passage of undetermined extent, which was doubtless one of those subterranean vaults constructed for the carrying off the filth of the city by the influx of the sea ; and, as far as the eye could trace it from above, it seemed to confirm the assertion of the historian, that

these subterranean vaults had no less of architecture bestowed on them than had the buildings above ground . . .”

After giving a minute description of other parts of this fort, amongst the ruins of which he mentions seeing the shaft of a grey granite column, and several pieces both of sculptured and polished marble, fragments of the sumptuous palaces of the city, Mr. Buckingham continues :—“ The whole terminates in an edifice on a rocky base, surrounded by enormous blocks of stone, the disjointed masses of the ancient mole, now washed by the waves ; of which edifice scarcely any perfect portion remains, but among whose ruins are seen fragments of at least twenty granite columns.\* This may probably be the tower of Drusus . . . which was built on the mole itself, where this ruin still stands, having braved the fury of two thousand winters, and still defying the storms of ocean to effect its total demolition, though its venerable ruins are lashed by an almost eternal foam. The fort was surrounded on the north, the east, and the south, by a ditch about thirty feet broad and twenty deep. . . .

“ The fragments of granite pillars,† and other marks of splendour seen near the sea, are unquestionably remains of the ancient Cæsarea ; but the fort itself, as it now stands, is as evidently a work of the Crusaders, who had one of their chief military stations here . . . (The) ruin of (the city) is so complete, that the most diligent survey would scarcely be rewarded by the fixing, with accuracy, the site of any of the public buildings, or even the delineation of its precise form, from the foundation of its walls. . . .

“ At the present moment, the whole of the surrounding country is also a sandy desert towards the land ; the waves wash the ruins of the moles, the towers, and the port, towards the sea ; and not a creature resides within many miles of this silent desolation.”—BUCKINGHAM’s *Travels in Palestine*, vol. i. pp. 197—215.

“ The writer saw no living thing within it, except, when wearied with wandering on foot over its tangled ruins, matted as they were, after the earlier rain, with thistles, hemlocks, and other wild plants intertwined, he had scarcely begun to ride through them by a beaten track, when a large serpent darted across it through the rustling plants, and at the sight his horse starting back, literally shuddered under him, and could not be forced onward, where the multitude, after the oration of Herod, had shouted, ‘ It is the voice of a God, and not of a man,’ and where, in later times, proud Romans, Saracens, and Templars, had gaily pranced along a street built of polished stones.”—KEITH.

“ Cæsarea is a heap of ruins, over which the green grass is growing, and perhaps after some more years, the very ruins will have disappeared, for the stones are carried away by ship-loads to Jaffa and other places for building.”—*Jewish Intelligence*, Nov. 1849.

Mr. Hardy thus contrasts the present state of Cæsarea with its past history :—“ Without the city,” he writes, “ on the southern side, are several mounds of ruins, overgrown with grass and brushwood. The amphitheatre stood in this direction, where Herod Antipas was smitten by an angel of God, and eaten of worms. Whilst I was occupied in taking a sketch of the

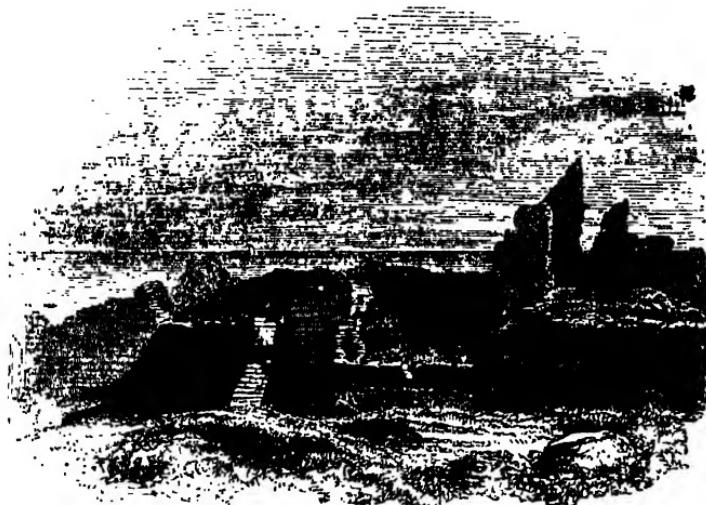
\* Irby and Mangles regard this building as erected upon the ruins of a Roman temple.

† Irby and Mangles mention finding a column of marble, with a Roman inscription of the Emperor Septimus Severus, but too much buried for them to copy ; but they subsequently learned from Mr. Banks (who had it cleared for copying) that it was a milestone.—*Travels*, p. 190.

place, my companions picked up several pieces of marble, upon one of which was a flower, well executed ; and upon another, a Greek inscription. There are many holes in the ground, made by the pachas of Acre in digging for the marbles by which their mosques and palaces are decorated. . . granite columns are scattered along the seashore in great profusion.

"There is not a single inhabitant near the place, nor any modern building. . . . A few birds and lizards are the only living possessors\* we saw of this once crowded city, and these are not often disturbed in their abode, as the road usually pursued passes at a little distance. . .

"As Cæsarea was the usual residence of the Roman governor, it was the scene of more numerous cruelties than any other part of Palestine during the heathen persecutions. The ecclesiastical historian Eusebius was bishop of this place. The famous Origen resided here some time, and whilst yet a layman, was permitted to preach before bishops. A walk through ruins where scenes so memorable have been witnessed, could not but awaken many trains of most profitable reflection. The woes of the prisoner, and



WALL OF CÆSAREA.

the triumphs of the persecutor, had alike passed away ; and where the simple eloquence of an apostle was once heard, and its power was acknowledged by an unjust judge and an ambitious monarch, no sound could then be distinguished but the gentle murmur of the sea. There was a single boat passing at the time, with its small white sail, to remind us of the thousands that once bore themselves proudly upon the same waters, laden with the produce of all climes. This spot is particularly dear to the missionary, as it was consecrated by the baptism of the Gentile convert, at that time a wonder without a precedent. Now the children of the adoption are living under the wrath of God, and the despised 'barbarians,' from almost every

\* Lamartine relates, that he disinterred three jackals from the bosom of the ruins, and that the only human being whom he saw in Cæsarea was a young Arab shepherd, who arrived there during Mr. Lamartine's visit, to water his flocks at a fountain, to which he said he was in the daily habit of resorting for that purpose from his dwelling, two leagues distant, among the mountains. According to Pococke, crocodiles were formerly found near Cæsarea.

nation among men, are admitted into the favour of the Lord, and have the promise that they shall sit down with Abraham, and Isaac, and Jacob, in the kingdom of heaven. At such a place, the solemn caution of the Apostle comes home to the mind with additional force, ‘Be not high-minded, but fear; for if God spared not the natural branches, take heed lest he spare not thee!’”—HARDY’s *Notices*, pp. 125—128.

OLD ADAMSON—*concluded from p. 15.*

WHEN I entered the cottage, the first object that caught my eye was old Adamson busily employed in—can the reader guess what he was doing? Reading; no, he was not reading, though it was evident he had been doing so; for the Bible and Prayer-book lay by his side, and the Prayer-book was lying open at the Psalms for the day. No, he was not reading, for he was working—aye, and moreover, *darning*—yes, darning one of his yellow handkerchiefs, as neatly as any woman at his age could have done. His spectacles (which I found he did not wear, excepting when working or reading) were on his nose, and he was pulling out his thread in such a methodical way, that you might have fancied it his sister instead of himself; but she was at the washing tub, so that could not be. He smiled at seeing my surprise, which I did not attempt to conceal, and said, “You are not used to seeing men-bodies at the needle, I warrant, ma’am.” “No, indeed, Mr. Adamson, it is a new sight to me; it would almost make me fancy that you must have been a sailor, for they and tailors are the only men who handle the needle with such skill as you seem to do; and yet I cannot think you have been a sailor either, you are not weather-beaten enough for that; and as to a tailor, why, you have no appearance of that about you, I should say.”

“No, ma’am, neither sailoring nor tailoring have fallen to my lot,” said he, laughing; “I have been a gentleman’s servant the most of my days. To be sure, I was six months head waiter at the George, in the town, but with that exception I have been footman, or butler, ever since I went into service; and good families I have lived with. Not many of them though, for I never was fond of change; seven years was the shortest time I ever lived with a master, and I never met with a bad one, which is more than most folks can say. I often think, ma’am, I have been much favoured.” “Good servants generally will find good masters,” I replied; “though certainly it is wonderful that you never met with a bad one.”

“Well, ma’am, I believe I have to thank my father for much of my good fortune; he started me well, and gave me a few good rules when I first went out, and I never forgot them. ‘Never be above your place, Tom,’ he used to say; ‘never be afraid of work, nor say, I was not hired to do this, or that, or the other. Recollect, you have a Master in heaven, as well as a master on earth; while you serve the one, don’t forget the other. Keep close to the Church, Tom; you were baptized in it, and confirmed in it, and you have received the Sacrament of the Lord’s Supper in it. Many new religions are astir in the world, but none of them will take you more safely through this world, and more surely to a better, than the Church. But, remember, you are not to be a Churchman in name only.’ This is the kind of advice my father gave me, ma’am, and many such sayings he had; he was a man of few words, but those few were to the purpose.” “They were, indeed,” I replied, “and I wish we had more of such fathers now a-days, and then, perhaps, we should have more of such sons, and there would be better servants than we have at

present." "Well, ma'am, it must indeed be allowed, (though, perhaps, it's not for me to make the remark,) that servants are not now what they used to be. There is not that attachment to families that there was in my time. Often a simple reprimand, now, is sufficient to make a servant give up his place ; and, perhaps, their readiness to do that is not more remarkable than the ease with which they will leave their Church, and join any sect that may entice them."

"Perhaps," I rejoined, "the one may be the cause of the other ; for we may be pretty sure that those who think lightly of their heavenly Master's service, will not think more of an earthly master ; so that, indifference in religion is pretty sure to lead to recklessness in other things." "Aye, ma'am, often and often I've said to our Meg, how different it was when I was a boy, and still more so when my father was young ; I've heard him say, then master and mistress, children and servants, all met in their parish church ; but now it's far otherwise. The family may be at the church, but it's a chance if the servants are not at half-a-dozen different places of worship, just according to their own fancy. I cannot help thinking, as I said before, that where there is a want of respect for authority in one thing, there will be in another. Now-a-days, it's all what *I* think, and what *I* approve. Why, actually, ma'am, I heard a person say the other day, that he had no notion of keeping to the church now, for there was so much to be heard at other places ; and besides which, he must say, that Mr. Seymour's sermons were not always to his taste ; he was rather too fond of telling the people what they ought to do, as if he knew so much better than they did." "And what did you say, Mr. Adamson, to your friend's remark?" "What did I say, ma'am !—why, I could not help laughing, and telling him, that I supposed the next time he reminded his boys and girls of their duty, they would be telling him that they knew it as well as he did ; and that, if they thought they could meet with any one to take them in for a few days, they would, perhaps, be leaving him, just to hear and see what other parents did to their children. I wish, ma'am, you had seen Will Morris's face ; he said I was the quaintest fellow that ever was ; and we had such a talk, before I could convince him that his wandering away from his parish priest's instructions, was just like children wandering away from their own parents." "But did you convince him at last?" I asked. "Why, ma'am, he said he did not doubt but I might be right, only he did not like to be *tied*. The same story you see, ma'am—a want of submission."

"But we have wandered from our starting-point, Mr. Adamson, which was about your working. You say that that you have been in service most of your life, but you surely did not darn your handkerchiefs then?" "Poor old Lady Broome! (she was mother to my master, Sir Thomas Broome) many's the time, when she saw me sitting darning, as she passed the house-keeper's room, she would say, 'You are a very careful man, Thomas, I wish all people were as exact as you.'"

"But, Mr. Adamson, if you have lived in such good families, and been so careful, and, of course, as you stayed so long in your places, you would have good wages ; did you never manage to lay by anything for your old age?" "Never, ma'am ; and you will not be surprised when I tell you the reason. My poor father, who was always a tender man, was bed-ridden for many years, and was incapacitated from work before that. All that I had saved I gave to him ; and all that I could save, you may be sure was shared with him as long as he lived. After his death, my dear mother had a stroke of the palsy, and could do but little for herself ; so, of course, it

was useless my thinking of laying by money, when she wanted it. Ah ! poor soul, she had spent the best part of her life in the service of her children, and it was only right that we should help her, when we had health and strength, and she had not. *Aye, ma'am,*" he added with much earnestness, "there's nothing in this world like a mother ! Go the world over, and you'll never find anybody that will do for you as your mother has done." "And how many years is it since you lost yours?" "Just fifteen years ago ; and a great age she was. She breathed her last in my arms. I had come from Cumberland to bring her a little money, and spend the Christmas with her ; for Sir Thomas Broome, whom I lived with then, (he was certainly a most kind master,) sent me to pay her a visit for a few days, little thinking that it was to see her on her death-bed. But so it was providentially ordered ; and a comfort it will be to me to my dying day, and that will not be long first, to think that I was there to receive her blessing. I was her only son, and she thought a great deal of me."

" You were her only son, Mr. Adamson, you say, and a good son too, I am sure, it was therefore no wonder that she thought much of you ; but since her death, have you not been able to lay by anything for yourself?"

" No, ma'am, not a farthing, and never shall now ; but I'm sure I shall be provided for. He who feeds the ravens, will not let one of his servants want. Often when we seem to be getting lower and lower in the world, the Almighty stirs up something for us, just as he did when you came to offer Meg your washing. We were going fast down hill just then ; and after you went, Meg and I observed, that we ought never to be distrustful of God's providence over us, for that he brought help to us when we least expected it. More than once it has happened so, ma'am ; and it is so little that we want for the short time we have to live, that we are quite easy about worldly matters."

" I have closed the eyes of two of my sisters, and now it is hard to say whether Meg or I shall leave the other lonely. We often pray that if it be God's will we may not be long divided ; and, indeed, at our age, it is not likely that we shall, for I am in my seventy-eighth year, and Meg is in her seventy-fifth."

The old-fashioned clock that stood in one corner of the room struck one as old Adamson finished his sentence, and I felt that I had stayed over their dinner-hour, for a saucepan was on the fire, and by its constant bubbling proclaimed that something was cooking within.

'How really rich, thought I, as I was walking home, are these poor people in the midst of their poverty ! Theirs is a wealth that never fails them. Their bags are never empty. And what is the secret of all this ? A humble, contented, thankful spirit, springing from an unshaken trust in God's gracious providence—bearing privation, if it comes, without a murmur ; abounding in thankfulness when it is removed. Bishop Wilson says, "They that have a convenient place to sleep in, and they that have the comfort of sleep, have both great reason to be thankful ; and even they that want these mercies have reason to bless God, if, in the midst of their afflictions, he is pleased to refresh them with the comforts of his grace." This contented couple seemed in their daily practice fully to realize these words.

An interval of nearly a month having ensued between one of my visits, I was distressed on paying my next, to see Margaret not at the washing tub, but in bed—sensible, indeed, but deprived almost of speech, and power of motion. I had been from home for a few days, and on my return, I was

told that my washerwoman had had a paralytic stroke. No one knew who had called to say so, nor whether it was my present washerwoman or her predecessor; in fact, the message seemed a vague one, and I determined to walk over the following day, to see if it were indeed poor Margaret who had been thus afflicted.

The moment I entered the door, I saw her stretched on the bed, pale and helpless. A smile passed over her countenance as she recognised me; and I sat down by her side, and heard from her brother, (for she could scarcely articulate,) that, three days before, she had been seized with a paralytic stroke; that, at first, she could not speak at all, nor even move, but that now she could make herself understood. Her brother said that she had no pain; that they had had their good clergyman to see her, and he was coming the next morning to administer the holy communion to her; "so," he added, "we shall partake of it together. Ay, ma'am, Mr. Seymour is very attentive to my sister. He has been every day to see her since she was seized. I believe he thinks she'll not get better."

I had brought two or three little things which I thought she might like; and having charged her brother to send me word if there was anything else she wanted, (though this, perhaps, was scarcely necessary, as I was sure Miss Anna would look after her favourites,) I took my leave. As I left the cottage, I felt it was a great uncertainty whether I should see Margaret again in this world; and I walked home with very different feelings from those which I generally had, after visiting their humble dwelling.

I was not able to return to their cottage for more than a week, and then I had the pleasure of seeing Margaret sitting by the fireside, looking pale and wan, indeed, and with one hand and arm useless, but still able to sit, and her speech evidently improved.

Week after week Margaret continued to improve, though very slowly. She regained the use of her arm after some months; but to this day she can make no use of her hand. Old Adamson, each time that I went, used to delight in relating her improvement.

Of course, this illness of Margaret's put an end to her taking in washing, but still she managed to clean her house, and actually scrubbed the floor and table with her left hand, as clean as many do, who have the use of both hands. This she had continued to do for three years; and only last week I found her on her knees cleaning up the fire-place.

Not very long after Margaret's illness, I heard that they were going to remove, and, knowing how great would be the fatigue to them, I went to ascertain the cause; as I thought, if it were merely on account of having a little more rent to pay, that we might manage to raise the money quarterly to prevent that; so I went to hear all about it. Margaret was by herself, for her brother had gone to look at the new cottage they had taken. "And do you like the thoughts of moving, Margaret?" I asked. "Why, ma'am, indeed I cannot exactly say that; but I think we shall be more comfortable when it is done, though it's a great fatigue for us, for we are not like young folks."

Nearly a twelvemonth passed after their change of abode, without any material variation in their daily course. Miss Anna continued as kind and attentive as ever, though their removal had taken them rather farther from her; and Mr. Seymour's continued pastoral care was still the constant theme of their praises. Their Christmas, they said, had been a grand one indeed. Mr. Seymour had sent them a piece of beef, and Miss Anna had actually given them a whole loin of mutton. They ate the

mutton first, and salted the beef; and it lasted them a whole month, and tasted finely of the salt at last, they said. Thankful creatures! whatever was given them, was sure to be the *best* they had ever had.

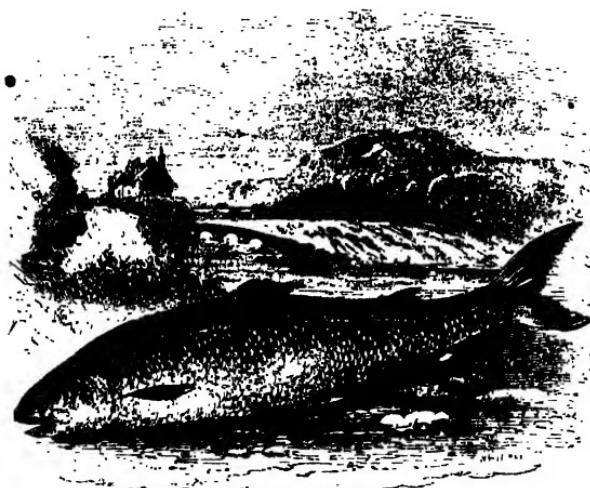
Not long after this grand Christmas, my poor old friend was seized with an illness which I certainly thought would have carried him into the grave. I scarcely know what to call it, but it seemed like a complete breaking up of his constitution; a general debility, and want of power. He was firmly convinced that he was going to die. A very few days, he used to say, he was certain would see a change in him, and he was quite ready; he merely waited for the call.

However he recovered; a year has passed since he had this warning; and it is not a week ago, since he told me that his bodily health was as good as ever it had been in his life, but that, of course, his rheumatic pains would never leave him, and his old fall rendered him unable to walk fast, or far; but, with these exceptions, he said, he did not believe there was a healthier man living. He and his sister go on in their old course, patterns of contentment to all. He is still as fond of talking of days gone by, of the many instances, in the course of his life, in which Providence had been working for his good. He still reads, still darns, still praises Miss Anna and Mr. Seymour, and, to use his own words, is still "blessed with a contented mind." His delight is, perhaps, the greatest, when he manages to hobble to church, with the quiet inoffensive Margaret at his side; and their devout behaviour when there affords a proof of that reverence for God's word, God's house, and God's ministers, which a humble mind and a grateful heart will always rejoice to show.

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#### THE SALMON, THE TROUT, THE CHARR.

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THE SALMON (*Salmo Salar*).

THE well-known Salmon, (*S. Salar*), the largest of the genus, forms the object of one of the most important of our national fisheries, of which an idea may be formed from the quantity sent to the London market alone, during six days, (not selected as being unusually productive), viz., 253 boxes.

Sooner or later in the spring, according to the season and the locality,

the Salmon, which have spent some months in the ocean, begin to throng the mouths of the rivers. They remain a few days in the mingled salt and fresh water, before they proceed, when, having become seasoned, they ascend the streams.

As the summer advances, they proceed higher and higher, and become more swollen with roe, and consequently out of season. We have mentioned the perseverance with which they surmount obstacles, in their progress to the spawning place; "they shoot up rapids with the velocity of arrows, and make wonderful efforts to surmount cascades and other impediments by leaping, frequently clearing an elevation of eight or ten feet, and, gaining the water above, pursue their course. If they fail in their attempt and fall back into the stream, it is only to remain a short time quiescent, and thus recruit their strength to enable them to make new efforts."\* Mr. Mudie has described some of these feats which he has witnessed at the Fall of Kilmorac, in Inverness-shire. "The pool below this fall is very large; and, as it is the head of the run in one of the finest Salmon rivers in the North, and only a few miles distant from the sea, it is literally thronged with Salmon, which are continually attempting to pass the fall, but without success, as the limit of their perpendicular spring does not appear to exceed twelve or fourteen feet; at least, if they leap higher than that, they are aimless and exhausted, and the force of the current dashes them down again before they have recovered their energy. They often kill themselves by the violence of their exertions to ascend; and sometimes they fall upon the rocks and are captured. It is, indeed, said that one of the wonders which the Frasers of Lovat, who are lords of the manor, used to shew their guests, was a voluntary cooked Salmon, at the Falls of Kilmorac. For this purpose, a kettle was placed upon the flat rock on the south side of the fall, close by the edge of the water, and kept full and boiling. There is a considerable extent of the rock where tents were erected, and the whole was under a canopy of overshadowing trees. There the company are said to have waited until a Salmon fell into the kettle, and was boiled in their presence."†

The shallow beds of gravel near the sources of the streams having been at length reached, the Salmon proceeds to deposit its spawn, which is done in the end of summer or autumn. The male and female unite their efforts to make a trench, by working in the loose gravel with their noses, always against the stream; into this furrow, when completed, the female deposits her spawn, which is afterwards covered up again. The fish are now unfit for food, and are called unclean. At the end of winter, they gradually descend the rivers, and soon regain the sea, where they recover their health and strength, and increase greatly in size, returning again in the summer to the rivers as before, very often (not *always*) ascending the identical stream which they left.

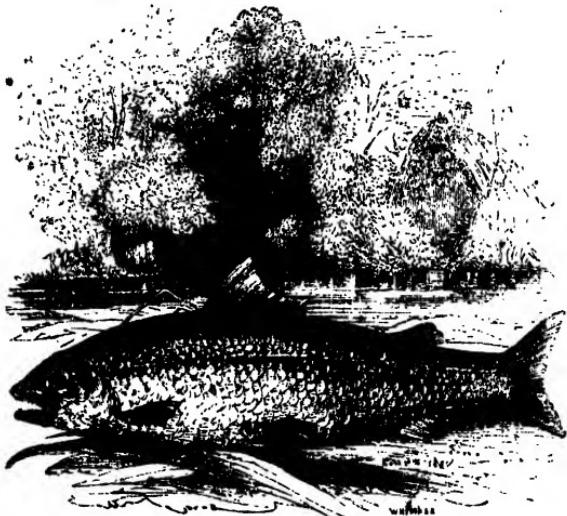
In the spring, the spawn deposited in the preceding autumn is hatched, and the fry, less than an inch in length, ascend through the gravel, and proceed to pursue the same course as the adults, down to the sea, increasing in size as they go. In May or June they usually reach the salt-water, in which they remain till the waning of the summer warns them again to seek the shallows. Their increase is very great and remarkably rapid, so that a fish of the first summer will often weigh six pounds. Before the first spawning, the fish is called a Grilse. It has been proved by experiment, that fry confined in fresh-water will grow and thrive, without any com-

\* Yarrell, Br. Fish, vol. ii. p. 8.

+ Brit. Naturalist, vol. i. p. 191.

munication with the sea.\* The Salmon has been known to attain the weight of eighty-three pounds.

The Salmon-Trout (*S. Trutta*) in its habits and economy, much resembles the Salmon; migrating from the sea to the rivers and back again. It is considered as next to that fine species in value for the excellence of its flesh. It is found in some parts of our country, but principally in the streams of Scotland, Wales, and Ireland. The largest individual on record weighed seventeen pounds.



THE TROUT (*Salmo Fario*).

The Common Trout (*S. Fario*), which by its voracity, and no less by its cautious vigilance, affords excellent sport to the angler, is one of the most beautiful of the genus. The form is elegant, the curves which form the outline of the back and the belly being very graceful and flowing: the colour of the upper parts is yellowish, with many reddish spots, brighter on the sides, where the hue becomes golden yellow; the belly silvery white. And its excellence answers to its beauty; for, as Walton observes, "he may justly contend with all fresh-water fish, as the Mullet may with all sea-fish, for precedence and daintiness of taste; and, being in right season, the most dainty palates have allowed precedence to him." The Trout does not descend to the sea, but is a constant inhabitant of the rivers, haunting such places as afford deep holes and hollow banks, in which it lies concealed during the day, but in the night swims near the surface, snaps at flies, and hunts after small fishes, frogs, and even water-rats. "Though vigilant and cautious in the extreme, the Trout is also bold and active. A Pike and a Trout put into a confined place together, had several battles for a particular spot, but the Trout was eventually the master."† Trout of fifteen pounds are occasionally caught in the Thames; but one is recorded to have been caught near Great Driffield in 1832, which was thirty-one inches in length, twenty-one in girth, and weighed seventeen pounds. And, in 1822, one was taken near Salisbury, which weighed twenty-five pounds.

The fish called Charr, inhabiting mountain lakes, and marked by the

\* Yarrell's Br. Fishes, ii. 21.

† Yarrell.

brilliant orange hue of the underparts,—is a species of Salmon (*S. Alpinus*, *S. Salvelinus*, &c.). It is highly esteemed for its flavour, but does not afford much sport to the angler.

The Graylings (*Thymallus*) resemble the Trouts, but are distinguished by the smallness of the mouth, the large size of the scales, and the great height and length of the first dorsal fin: the gills have seven or eight rays. They are generally handsome fishes, and scarcely inferior to the Trouts in flavour. When newly taken from the water, they emit a peculiar odour, resembling that of thyme. They do not appear to be migratory.

## ON COMBINATIONS OR UNIONS.

WAGES are not dependent upon the will of those who pay them; nor is a master always able to pay his workmen as large wages as he and they would desire. There are various reasons for this. It may be, that a master's profit does not admit of his expending more than a given sum in wages; and the capital he has invested in the construction of his farm-buildings, purchase of his implements of husbandry, if he be a farmer, or of his mill machinery, if he be a manufacturer, oblige him to require a remunerating interest for the money he has laid out. In fact, wages can only be altered by changing the proportion between the number of labourers, and the fund set apart for their maintenance.

But workpeople, in the manufacturing districts, with a view to raising the ordinary rate of wages, have, of late years, resorted to the expedient of unions, or combinations and strikes, to effect their object. It is proposed to show you with what bad effect these strikes and combinations have been attended, both to workmen and to their masters; but, more especially, to workmen.

A union is a combination of workpeople against their masters to carry some particular object; this is, generally, to force up wages; on the presumption that masters are able, if they choose, to give a higher rate than they do: but these unions have often other objects in view besides this one. Sometimes they would dictate to their masters when and by whom they shall get their work done; sometimes they would prevent them from taking apprentices; sometimes they would prohibit them from paying their workpeople by the piece, and insist upon all being paid at a particular rate of day wages, irrespective of the work done being bad or good.

The following examples will show you with how little success their efforts to raise wages by these means have been attended:—

In the year 1810, the spinners in all the mills in the neighbourhood of Manchester, including Stockport, Macclesfield, Staley-bridge, Hyde, Oldham, Bolton, and Preston, turned out, and 30,000 people were thrown out of employ. Their object was to raise the wages in these country districts to a level with those in Manchester. Now, it so happens that in Manchester, wages have always been, and must of necessity always be, higher than in the surrounding places; and for the following reasons: First, all the yarn and goods that are made in England are sent to Manchester to be sold; and thus Manchester enjoys facilities for obtaining raw cotton hardly equalled by any other town in the kingdom. Secondly, there also the principal machine-makers reside; therefore, master-manufacturers can get their machines at less expense there, than others who live at a greater distance. Thus they can afford to pay their men at a higher rate; but the

country masters are deprived of these advantages, and are consequently obliged to reduce the wages of their workmen to a lower rate, as otherwise they would be unable to get the same profit on their capital as the Manchester manufacturers ; and without this, they must cease working ; for, it is merely the average rate of profit they obtain, and their ability to get their work performed at lower prices than at Manchester, that is the condition of their remaining in the business at all. On the occasion in question, 4*d.* was paid in the country districts for spinning a lb. of cotton, and 4*½d.* in Manchester ; and to raise the country wages to this latter sum was the aim of the union.

But the attempt proved a signal failure, as from its folly and injustice it was right it should. After four months of misery, during which time the hard-earned savings of years of industry were consumed, and furniture, clothes, and every article of comfort or convenience were disposed of, these misguided men were obliged to return to their work, not at the rate of 4*d.*, which they had been previously earning, but at 2*d.* ; thus submitting to a reduction of 50 per cent. on those wages, to raise which every thing but existence had been staked.

In 1824, all the cotton spinners in Hyde turned out for an increase of wages : but this time it was much against the will of the workmen ; the committee of the union to which they belonged insisted upon it. The result of this strike was, that the men, after enduring the greatest hardship, came back to their work at the same wages which they had turned out to raise.

In 1830, 3000 spinners at Ashton and Staley-bridge left their work, by which fifty-two mills, and 20,000 people, at least, were thrown idle for ten weeks. At the end of that time, they returned to their work at the same wages they had previously been receiving.

Such has been the result of these attempts to force up wages. Now, look at the consequence of the efforts of the unions to effect some of the other objects mentioned above.

A union in Leeds required of a manufacturer in that town to pledge himself to weave and spin all the cloth he made upon his own premises, on pain of a strike ; and, moreover, besides having none of it done in the neighbouring villages, as had hitherto been his custom, to pay the work-people the prices they demanded. The master consented ; but, what did he do next ? He immediately reduced his manufacture two-thirds, took in work of a different description ; and, consequently, his weavers' earnings were reduced from 17*s.* to 7*s.*, and his spinners' from 27*s.* to 10*s.* After enduring this for three months, his workmen petitioned him to recommence manufacturing as before ; but he refused to comply with their wishes.

Another master in Leeds employed a considerable number of workhouse children, who were learning their business at the factory. It did not suit the purposes of the union that these children should be thus employed ; and having found that one of the overseers was a butcher, they threatened him with the loss of all his custom if he did not prevent the children from working in the interdicted factory. The overseers yielded, the children were withdrawn from their employment, and the parish had to pay the whole charge for their maintenance.

THE GOODNESS OF GOD, EXEMPLIFIED BY THE HAPPINESS OF HIS CREATURES.



It is a happy world after all. . The air, the earth, the water, teem with delighted existence. In a spring noon, or a summer evening, on whichever side I turn my eyes, myriads of happy beings crowd upon my view. "The insect youth are on the wing." Swarms of new-born *flies* are trying their pinions in the air. Their sportive motions, their wanton mazes, their gratuitous activity, their continual change of place without use or purpose, testify their joy, and the exultation which they feel in their lately discovered faculties. A *bee* amongst the flowers in spring is one of the most cheerful objects that can be looked upon. Its life appears to be all enjoyment; so busy, and so pleased; yet it is only a specimen of insect life, with which, by reason of the animal being half domesticated, we happen to be better acquainted than we are with that of others. The *whole winged* insect tribe, it is probable, are equally intent upon their proper employments, and, under every variety of constitution, gratified, and perhaps equally gratified, by the offices which the Author of their nature has assigned to them. But the atmosphere is not the only scene of enjoyment for the insect race. Plants are covered with aphides, greedily sucking their juices, and constantly, as it should seem, in the act of sucking. It cannot be doubted but that this is a state of gratification. What else should fix them so close to the operation, and so long? Other species are *running about*, with an alacrity in their motions, which carries with it every mark of pleasure. Large patches of ground are sometimes half covered with these brisk and sprightly natures. If we look to what the *waters* produce, shoals of the fry of fish frequent the margins of rivers, of lakes, and of the sea itself. These are so happy, that they know not what to do with themselves. Their attitudes, their vivacity, their leaps out of the water, their frolics in it (which I have noticed a thousand times with equal attention and amusement), all conduce to show their excess of spirits,

and are simply the effects of that excess. Walking by the sea-side, in a calm evening, upon a sandy shore, and with an ebbing tide, I have frequently remarked the appearance of a dark cloud, or, rather, very thick mist, hanging over the edge of the water, to the height, perhaps, of half a yard, and of the breadth of two or three yards, stretching along the coast as far as the eye could reach, and always retiring with the water. When this cloud came to be examined, it proved to be nothing else than so much space, filled with young *shrimps*, in the act of bounding into the air from the shallow margin of the water, or from the wet sand. If any motion of a mute animal could express delight, it was this; if they had meant to make signs of their happiness, they could not have done it more intelligibly. Suppose, then, what I have no doubt of, each individual of this number to be in a state of positive enjoyment; what a sum, collectively, of gratification and pleasure have we here before our view!

The *young* of all animals appear to me to receive pleasure simply from the exercise of their limbs and bodily faculties, without reference to any end to be attained, or any use to be answered by the exertion. A child, without knowing anything of the use of language, is in a high degree delighted with being able to speak. Its incessant repetition of a few articulate sounds, or, perhaps, of the single word which it has learnt to pronounce, proves this point clearly. Nor is it less pleased with its first successful endeavours to walk or rather to run (which precedes walking), although entirely ignorant of the importance of the attainment to its future life, and even without applying it to any present purpose. A child is delighted with speaking, without having anything to say, and with walking without knowing where to go. And, prior to both these, I am disposed to believe, that the waking hours of infancy are agreeably taken up with the exercise of vision, or perhaps, more properly speaking, with learning to see.

But it is not for youth alone that the great Parent of creation hath provided. Happiness is found with the purring cat, no less than with the playful kitten; in the arm-chair of dozing age, as well as in either the sprightliness of the dance or the animation of the chase. To novelty, to acuteness of sensation, to hope, to ardour of pursuit, succeeds, what is, in no inconsiderable degree, an equivalent for them all, "perception of ease." Herein is the exact difference between the young and the old. The young are not happy, but when enjoying pleasure; the old are happy when free from pain. And this constitution suits with the degrees of animal power which they respectively possess. The vigour of youth was to be stimulated to action by impatience of rest; whilst to the imbecility of age, quietness and repose become positive gratifications. In one important respect the advantage is with the old. A state of ease is, generally speaking, more attainable than a state of pleasure. A constitution, therefore, which can enjoy ease, is preferable to that which can taste only pleasure. This same perception of ease oftentimes renders old age a condition of great comfort; especially when riding at its anchor after a busy or tempestuous life. It is well described by Rousseau, to be the interval of repose and enjoyment, between the hurry and the end of life. How far the same cause extends to other animal natures, cannot be judged of with certainty. The appearance of satisfaction, with which most animals, as their activity subsides, seek and enjoy rest, affords reason to believe, that this source of gratification is appointed to advanced life, under all, or most, of its various forms. In the species with which we are best acquainted, namely our own, I am far, even as an observer of human life, from thinking that youth is its happiest season,

much less the only happy one; as a Christian, I am willing to believe that there is a great deal of truth in the following representation given by a very pious writer, as well as excellent man:—"To the intelligent and virtuous, old age presents a scene of tranquil enjoyments, of obedient appetite, of well-regulated affections, of maturity in knowledge, and of calm preparation for immortality. In this serene and dignified state, placed as it were on the confines of two worlds, the mind of a good man reviews what is past with the complacency of an approving conscience; and looks forward with humble confidence in the mercy of God, and with devout aspirations towards his eternal and ever-increasing favour."—PALEY.

\* Father's Instructions ; by Dr. Percival of Manchester, p. 317.

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

### THE SPINNING JENNY.— HARGREAVES.

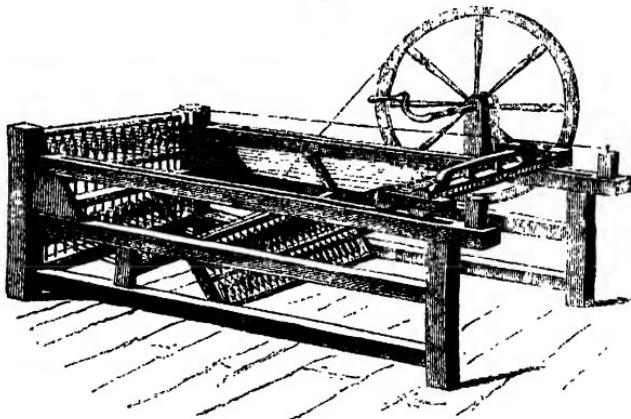
THE method of spinning with the one-thread wheel long continued to impede the progress of the manufacture, when, about the year 1764, was made the first mechanical invention profitably employed by manufacturers in England in spinning cotton yarn. This was the *Spinning Jenny*, invented by James Hargreaves, at Stand-hill, near Blackburn, in Lancashire, near the print-ground, the first and infant establishment of the father of the late Sir Robert Peel. Hargreaves was a plain, industrious, but illiterate man, a weaver by trade, and who, in common, with others of his class, felt great difficulty in supplying his loom with yarn. The principle of his invention is precisely that of the spinning-wheel; its merit is its greater productiveness, and it is said to have occurred to him by one of those so-called accidents, which, when the mind is brooding on one particular subject, frequently occur, and lead the thoughts in the right direction; or perhaps, we may rather say that at such a time the mind is alive to the reception of any incident that may accidentally arise. Hargreaves had twelve children; and it is related that some of them and their playmates were one day assembled at play, during the dinner hour, when a wheel at which he, or some member of the family, was spinning, was accidentally overturned: the thread still remained in the hands of the spinner, and as the wheel was prevented by the framing from touching the floor, it still continued to turn round, and to move the spindle as

before, but in an upright instead of a horizontal position. Hargreaves surveyed this with mingled curiosity and attention; he expressed his surprise in loud exclamations, and continued again and again to turn the wheel as it lay on the floor with an interest which no one about him could understand. He had before attempted to spin with two or three spindles attached to ordinary wheels, holding the several threads between the fingers of the left hand, but the horizontal position of the spindles rendered the attempt ineffectual; and the thought had not struck him till now, that if a number of spindles were placed upright, and side by side, several threads might be spun at once. He therefore constructed a frame, in one part of which were placed eight rovings in a row, and in another part a row of eight spindles. The rovings, when extended to the spindles, were made to pass between two horizontal fluted bars of wood, forming a clasp, and acting in the place of as many fingers and thumbs as there were threads. This clasp opened and shut somewhat like a parallel ruler, and when pressed together held the threads fast. A certain portion of roving being extended from the spindles to the fluted wooden clasp, this was closed with the left hand, and then drawn along the horizontal frame to a considerable distance from the spindles, the spinner at the same time with his right hand turning a fly wheel, which caused the spindles to move rapidly round. Thus, by giving the threads the requisite twist, at the same time that they were lengthened out, the roving was spun

into yarn. The threads were then thrown off the points of the spindles by a slight backward motion ; and, being pressed down by a "faller," the yarn was then wound upon the spindles (the quantity wound upon each spindle being termed a "cop"). On the clasp being returned to its first position, it was again opened by a simple contrivance called a "knocker off," and then a fresh length of roving was drawn out and spun as before. The number of spindles mounted in one jenny was afterwards increased from eight to eighty.

Hargreaves was perfectly satisfied with the success of his invention, and would have been content to supply his own loom with weft without telling his neighbours by what means it was produced ; for he probably suspected that so powerful a rival would be regarded with envy and ill-will. This secret, however, was let out through the vanity of a female member of the family, who, on a visit to a sick friend, boasted of having spun a pound of cotton since her last

visit shortly before. This was soon noised abroad, and excited so much surprise and ill-will among the spinners, that they broke into the poor inventor's cottage, destroyed the dreaded rival and most of his furniture with fire, and even threatened violence to Hargreaves himself. This compelled him to quit his native village, and he removed, in 1768, to Nottingham, where Mr. Thomas James, a joiner by trade, assisted him in erecting a small spinning-mill upon the jenny plan where he spun yarn for the hosiers with considerable success. In 1770 he took out a patent for his invention, which was already beginning to be known and appreciated among manufacturers, and soon came to be extensively pirated in Lancashire. He therefore brought actions against them for damages, when a deputation was sent to him with the offer of 3000*l.* for permission to use his machine. Hargreaves was unfortunately advised to refuse this offer, and to demand a larger sum. This was refused ; the negotiation was broken off, and the



HARGREAVE'S SPINNING JENNY.

actions proceeded ; but before they came to trial, Hargreaves' attorney was informed that, previous to the date of the patent, he had, under the pressure of poverty, mounted and sold several of his machines : this being sufficient in law to bar his claim to redress, the attorney abandoned the actions, and Hargreaves obtained no remuneration for an invention which at the time was really a na-

tional benefit. He died in 1778, not as many writers state, in the deepest poverty and distress, for he left his family about 500*l.* The youngest and only surviving daughter of Hargreaves received the sum of 250*l.* from the "Royal Bounty Fund," through the hands of the late Sir Robert Peel, then first Minister of the Crown.

The spinning jenny soon spread through Lancashire, and supplied the

long-felt deficiency of spinning hands, because by its means one woman could easily spin as much as had been formerly spun by twenty or thirty persons with the one-thread wheel.

But the great and increasing demand for yarn soon reduced the spinning jenny to the same circumstances in which the distaff and spindle, and the one-thread wheel, were previously found ; and the jenny was also destined to be superseded by more powerful and productive machinery, the history of which may now be briefly sketched.

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SPINNING BY ROLLERS.—  
ARKWRIGHT.

In every kind of spinning, whether the material be cotton, flax, or wool, it is necessary to disentangle the fibres, to draw them out, and lay them side by side, before they can be twisted into threads. This is partially done by *carding*, by which the cotton is combed out into a sort of fleecy riband, called a *card end*, or *sliver*. In this state the fibres are very loose, and not laid so parallel with each other as they require to be in machine spinning. The sliver is therefore passed between two or more pairs of small rollers placed horizontally, the upper and lower roller in each pair revolving in contact. The sliver being put between the first pair of rollers, is drawn through and compressed, whereby a degree of firmness is given to it ; it is then seized by the second pair, and is passed by them to the third. Now, if these three pairs of rollers all moved round equally fast, the only effect on the sliver would be to compress it ; its length and substance remaining the same as before ; but if the second pair of rollers be made to revolve three, four, or even ten times faster than the first pair, it is evident that the cotton must be drawn out three, four, or ten times smaller than when delivered from the first pair of rollers. By passing the sliver through other pairs of rollers acting on the same principle, it is at length properly extended and compressed, and the fibres are laid parallel and continuous ; the sliver is then connected with a spindle and

fly, the rapid revolutions of which twist it into a thread, and then wind it upon a bobbin. The importance of these beautiful contrivances will be better seen hereafter ; the present object being to complete the history of the cotton manufacture.

Sir Richard Arkwright is generally named as the inventor of the method of spinning by rollers. It has, however, been proved that the invention was the subject of a patent thirty years before Arkwright had even conceived it. The inventor, it is true, does not seem to have been aware of the value of his invention, for it was abandoned almost as soon as made ; it was taken up by another mechanist, and again abandoned ; it was attempted a third time, and succeeded ; but the success was due in great measure to the genius of Arkwright, who improved upon the crude idea of the invention (which was all that he seems ever to have received), and to the steady perseverance with which he carried out and completed the idea amidst difficulties from which most men would have turned aside.

John Wyatt, of Birmingham, about the year 1738, invented a machine for spinning by rollers on the principle just explained, in which year it was patented in the name of Wyatt's partner, Lewis Paul, a foreigner. Wyatt's name appears only as a witness to the specification of the patent, but there is evidence that Wyatt was really the inventor. Cotton yarn was spun by this machine in 1741, and for a year or two afterwards ; it was then given up. It was revived again, and a new patent taken out by Paul in 1758, but the success seems to have been small. In 1767, it is said that Highe, or Highs, made a machine on similar principles ; that he employed a clock-maker, named Kay, to assist him in the brass work, and that this Kay informed Arkwright of the invention, who immediately took it in hand, and with Kay's assistance succeeded in perfecting the machine.

Whether these particulars are strictly true as regards Highs may admit of some doubt ; for they rest simply upon the evidence of Highs and Kay on a trial in which Arkwright's patent was disputed, in 1785. There is no doubt whatever on the subject of

Wyatt's patent, for the specification is still in existence ; and this deprives Arkwright of the claim to the original invention ; but as his influence on the progress and prosperity of the cotton manufacture was all important, a sketch of his career may not be uninteresting.

Richard Arkwright was born at Preston, in Lancashire, on the 23d December, 1732. He was the youngest of thirteen children, and, as his parents were poor, his education, as may be supposed, was of a very humble character. He was apprenticed to a barber, and at that time was scarcely able to write. Little or nothing is known of his early years, except that in 1760 he set up in business for himself at Bolton, where he either discovered or read of a chemical process for dyeing hair ; he therefore began to travel about for the purpose of collecting hair, which he dyed and disposed of to the wig-makers ; a profitable occupation at that time, when wigs were so commonly worn. In 1761 he married a wife from Leigh, and the connexions he formed in that town are supposed to have led to much of his after knowledge. At any rate, living, as he did, in the midst of a manufacturing population, and travelling about from place to place, he must have frequently witnessed the shifts to which the weavers were exposed for want of a proper supply of yarn, and being himself of a mechanical turn, his mind would naturally be alive to any hints or suggestions for making the existing spinning machinery more productive. He was so fond of experiments in mechanics that he is said to have injured his business in pursuing them. He was engaged in attempts to discover the perpetual motion, and employed Kay, the clock-maker at Warrington, to bend some wires and turn some pieces of brass for the purpose ; this was in 1767. During his frequent conversations with Kay, he became acquainted with Highs' scheme of spinning by rollers, and Kay states that he actually showed Arkwright a model of Highs' machine. Imperfectly as the principle of this machine was as yet developed, Arkwright appears at once to have felt its importance ; for he abandoned everything else, and from this time devoted

himself with wonderful constancy and perseverance to the perfecting and completing of the spinning-machine. He persuaded Kay to join him, not as partner, but as servant, and bound him in a bond to serve him at a certain rate of wages. Kay not being able to make the whole machine, Arkwright went with him to Mr. Peter Atheron, an instrument-maker, and asked him to complete it ; but, from the poverty of Arkwright's appearance he refused to do so ; he agreed, however, to place at Kay's disposal a smith and a watch tool-maker, to make the heavier parts of the machine, and Kay was to make the clock-maker's part and instruct the workmen. By these means Arkwright's first engine, for which he afterwards took out a patent, was made. Being destitute of money to prosecute his invention, he went to Preston, his native place, and applied to Mr. Smalley, the head-master of the Free Grammar School, for assistance, who, being convinced of the utility of the machine, at once gave it ; and the spinning-machine was fitted up in the parlour of the house belonging to the school. It is mentioned as a proof of Arkwright's poverty, that having to vote at the contested election, which occurred during his stay in Preston, his clothes were in so tattered a condition, that a number of persons subscribed to put him in a decent plight to appear at the poll room.

Lest he should expose himself to the outcry against machinery which had been raised by Hargreaves' spinning jenny, Arkwright, accompanied by Smalley and Kay, removed to Nottingham, whither Hargreaves had gone before, so that this town became the nursery of the two most important inventions in the cotton manufacture. They applied to Messrs. Wright, the bankers, for a loan of money, which was granted, on condition of sharing in the profits of the invention ; but as the machine did not advance towards perfection so rapidly as the bankers wished, they recommended Arkwright to seek other assistance, and named Mr. Samuel Need, of Nottingham, the partner of Mr. Jedediah Strutt, of Derby, the improver and patentee of the stocking-frame, who, seeing Arkwright's ma-

chine, declared it to be an admirable invention, only wanting the better fitting of some of the wheels to each other. Both Need and Strutt immediately entered into partnership with Arkwright; the machine was soon perfected, and patented in 1769. In the specification, he says, that he "had by great study and long application invented a new piece of machinery never before found out, practised or used for the making of weft or yarn from cotton, flax, and wool; which would be of great utility to a great many manufacturers, as well as to His Majesty's subjects in general, by employing a great number of poor persons in working the said machinery, and by making the said weft or yarn much superior in quality to any ever heretofore manufactured or made."

The partners now erected a mill at Nottingham for the new machines: the machinery was at first turned by horses, but this being found too expensive, they built another mill, on a much larger scale, at Cromford, in Derbyshire, which was worked by a water-wheel, and hence the spinning-machinery was called the *water-frame*, and the yarn produced by it *water-twist*, a name which still continues to be applied to similar yarn.

The first great and important improvement introduced by the new machine was the production of a firm hard thread fit for warps. Linen warps were now abandoned, and goods woven altogether of cotton were for the first time manufactured in this country. Calico, in imitation of the Indian fabric of that name, was also made.

The jenny was well adapted for weft spinning, so that the two machines were brought into use together, and aided and assisted each other.

The effect of these improvements in increasing the trade of the country, and multiplying and cheapening cotton goods for all classes of the people, might have been expected to ensure general favour and protection for them. It is painful to find that the Lancashire manufacturers were the first to oppose Arkwright's inventions: they combined together and refused to buy his yarns, although admitted to be superior to all others. His manu-

facture of calico was becoming every day of more importance, but this was suddenly stopped, in consequence of the officers of Excise refusing to let them pass at the usual duty of three-pence per yard, insisting upon six-pence, as being Indian goods, although manufactured in England: when printed, the goods were prohibited altogether. A very considerable stock of goods thus accumulated, but they could not be sold, and the orders which were received every day could not be executed. Application to the Commissioners of Excise was without success. The partners, therefore, applied to Parliament for relief, which, after much expense, and in spite of a strong opposition of the Lancashire manufacturers, they obtained. An act was passed allowing the manufacture of calico; and to distinguish this from Indian or foreign calico, it was enacted, that "there shall be wove in the warp in both selvages, through the whole length thereof, three blue stripes, each stripe of one thread only," and stamped with the words *British Manufactory*.

For some years the manufacture was hindered by the imperfections of the machinery employed to prepare the cotton for the water-frame. Arkwright exerted himself to improve these machines, and succeeded in making them worthy to be associated with the beautiful machine which had cost him so much anxiety. Indeed, the whole of the cotton manufacture is indebted to him for a large number of valuable improvements, if not inventions; and those who rest his fame solely upon the invention of spinning by rollers are but little acquainted with his genius. He was the first person that ever erected a cotton-mill, and formed a distinct idea of all the processes that were to be carried on within it. He was able, in one view, to see all the changes which the fibres must undergo from the tangled wool to the finished thread, and when any imperfection was discovered in his yarn, he could in a moment state which of the processes through which it had gone was the cause of the defect.

The carding of cotton had hitherto been performed in a very rude manner by *hand-cards*, as already described. The first great improvement in this

process was the introduction of the "stock-cards," used in the woollen manufacture. These were of much larger size, and one of them being fixed to a table, while the other was hung from the ceiling, a greater quantity of work was produced with more ease to the carder. In 1748, the first grand step towards the present carding-machine was made by Lewis Paul; but the merit of perfecting it belongs to Arkwright. He combined the various improvements made by other men, added some of his own, and produced a complete machine, so well calculated for the purpose that the principle has not been improved upon to the present day.

The various admirable contrivances of Arkwright will be better understood when we enter upon the details of the manufacture. It will be sufficient here to state, that in December 1775, he took out a second patent for a series of machines, including carding, drawing, and roving machines, which he claimed as his own. Each machine was probably a skilful combination of the separate inventions of other men; but the effect on the cotton manufacture was not the less decided. Yarn could now be had in any quantity, and at a price lower than it had ever been known. The shuttle flew with fresh energy; weavers earned high wages, and fresh spinning-mills were erected to supply yarn. The fame of Arkwright was completely established; numbers of manufacturers flocked to buy his patent machines, or licences to use them. In 1782, it was calculated that upwards of five thousand persons were employed in the manufactories of Arkwright and his partners alone.

The triumphant success of Arkwright excited the jealousy of his fellow-manufacturers; and, as the idea was very common in Lancashire that he was not really the inventor of the various machines for which he had obtained patents, many manufacturers set up his machines without obtaining his licence. To vindicate his claims, he brought nine actions against as many persons in 1781. The Lancashire spinners formed an association among themselves to defend these actions, only one of which came to trial, and that was for infringing the

second patent. The defence was confined to a single point,—namely, that the specification or description of the invention, which he had enrolled, did not comply with the terms required by law, that it should contain such a full and clear account of the invention as would enable any one to take advantage of it, after the expiration of the term for which the patent was granted. On this ground a verdict was given for the defendant; the other actions were then abandoned, and thus this profitable patent was thrown open to the public.

Whatever the merits of the case may be, there can be no doubt that the setting aside of the patent was a great national advantage; for the manufacture soon acquired an extent and importance which could not have occurred had it continued to be a monopoly. Arkwright himself had his full share in the general prosperity; his numerous concerns were managed with great skill, and wealth poured in upon him from all sides. During several years he fixed the price of cotton twist, and all other spinners conformed to his prices. Honours, too, were not wanting. In 1786 he was appointed high-sheriff of Derbyshire, and having to present an address of congratulation from that country to his Majesty King George the Third, on his escape from the attempt of Margaret Nicholson on his life, he was knighted. He died at his house at Cromford, 3rd of August 1792, in the sixtieth year of his age.

In estimating the character of Arkwright, Mr. Baines is inclined to think that his inventive talents have been over-estimated. "In improving and perfecting mechanical inventions; in exactly adapting them to the purposes for which they were intended; in arranging a comprehensive system of manufacturing, and in conducting vast and complicated concerns, he displayed a bold and fertile mind and consummate judgment, which when his want of education, and the influence of an employment so extremely unfavourable to mental expansion as that of his previous life are considered, must have excited the astonishment of mankind." \* \* \* The most marked traits in the character of Arkwright were his wonderful ardour, energy,

and perseverance. He commonly laboured in his multifarious concerns from five in the morning till nine at night, and when considerably more than fifty years of age,—feeling that the defects of his education placed him under great difficulties and inconvenience in conducting his correspondence, and in the general management of his business,—he encroached upon his sleep in order to gain an hour each day to learn English grammar, and another hour to improve his writing and orthography.”

#### THE MULE JENNY.—CROMPTON.

While Arkwright was pursuing his prosperous course, another untaught genius was working in obscurity to produce a machine, which, in productive power and quality of work, has rivalled, and even surpassed the water-frame.

When the cotton-spinners attempted to produce fine qualities of yarn, the machines of Hargreaves and Arkwright were found to be not well adapted for the purpose. The water-frame spun twist for warps; but the pull of the rollers broke thread of fine quality, while winding itself upon the bobbins. The happy thought occurred to a weaver, of the name of Samuel Crompton, that by combining the principles of the roller spinning of Arkwright with the jenny spinning of Hargreaves, the objections which applied to them separately might be got rid of. By a perfectly original contrivance this union was effected, and the machine resulting from it was called “the mule,” or “the mule jenny.” Its distinguishing feature was that the spindles, instead of being stationary as in both the other machines, were placed on a moveable carriage, or “mule,” which was wheeled out to the distance of about five feet, in order to stretch and twist the thread, and wheeled in again to wind it on the spindles.

The author of this invention lived at a beautiful and retired spot near Bolton, called Hall-in-the-Wood. He was not above twenty-one years of age when he began to think about his invention. He had no sooner formed a clear idea of it in his own mind, than he proceeded to execute it himself, with such tools as he could afford to

purchase out of his little earnings. The machine was completed in 1779. “At the end of the following year,” he says, “I was under the necessity of making it public, or destroying it, as it was not in my power to keep it and work it; and to destroy it was too painful a task, having been four and a half years, at least, wherein every moment of time and power of mind, as well as expense, which my other employment would permit, were devoted to this one end, the having good yarn to weave, so that to destroy it, I could not.”

It appears, then, that the object of the inventor of this beautiful contrivance was merely to supply his own loom with good yarn; he took out no patent, and only regretted that public curiosity would not allow him to enjoy his little invention undisturbed in his attic: but the very superior quality of his yarn attracted persons from all quarters to see how he produced it, and they even climbed up to his windows to watch him at work. He erected a screen to prevent this, but the annoyance was so great, that he found it impossible to enjoy the fruits of his labour in quiet; he was, therefore, induced to lay the whole thing before a number of gentlemen and others, who subscribed a guinea each to look at it. He thus raised about fifty pounds, which enabled him to construct another machine, which was larger and more perfect than the first.

Crompton’s machine was for some time called the “Hall-in-the-Wood wheel,” and also the “muslin wheel,” because it made yarn fine enough for muslins. Indeed, at a time when no other machinery could produce yarn of more than forty hanks to the pound, Crompton spun eighties.\*

As Crompton’s invention was not protected by any patent, it was used not

\* Yarn is named after the number of hanks, each containing 840 yards, which weigh a pound. In Crompton’s time, eighty hanks to the pound was thought a wonderful achievement; but such have been the improvements in the machinery, that Mr. Houldsworth, of Manchester, has produced yarn of the number 460. So that, 460 hanks in the pound, at 840 yards to the hank, gives a length of 386,400 yards, or nearly 220 miles. This, however, is an unusually high number; 300 being the usual limit of fineness.



HALL-IN-THE-WOOD, NEAR BOLTON.

only by the great manufacturers of his neighbourhood, but soon by weavers, and also by persons who had no connexion with spinning or weaving.

Although the mule was thus getting into extensive use, yet the inventor did not profit by the immense advantages it was conferring on the manufacturer. In the year 1812, however, some gentlemen of Manchester got up a memorial to Government, which was numerously signed, stating Crompton's claims, and the result was<sup>a</sup> a

parliamentary grant of the clear sum of 5,000*l.* He employed this in establishing his sons in the bleaching business; but from various unfortunate circumstances they failed, and Crompton was again reduced to poverty. His friend and biographer, Mr. Kennedy, again exerted himself to raise a subscription, with which a small annuity was purchased; but he did not live to enjoy it more than two years. He died in the year 1827.

#### JESUS ENTERING THE CITY OF NAIN.

THE first sight which our Saviour saw on entering this town was one of sorrow—a funeral. It may be, indeed, that other objects presented themselves to His view; people engaged in business or pleasure; glittering objects to please the senses, such as we commonly see on entering a town. The Scripture record, however, makes no mention of these things, but singles out, what people in general take little notice of amidst the din and glare of a crowded city, a Funeral. People are generally apt to turn their eyes away from such a sight, and rather direct them to gay and cheerful objects, to whatever is calculated to drive off the gloomy thought, as it seems to them, of sorrow and death.

Not so the true disciple of the Lord Jesus Christ. Such an one has learnt, what the Scripture here silently suggests, that underneath the veil of mirth or business, aching hearts are often hid. However gay and glittering the city which we chance to enter may appear, it is still also the abode of sorrow. And, as the Lord Jesus passed by the objects which attract the children of this world, but noticed the funeral procession from which they for the most part would turn away; so His true servant ever remembers that “It is better to go to the house of mourning than to go to the house of feasting” . . . “for by the sadness of the countenance the heart is made better;” and so “The heart of the wise is in the house of mourning: but the heart of fools is in the house of mirth.”\*

\* Eccles. vii. 24.

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SCRIPTURE TOPOGRAPHY.—THE HOLY LAND.



MOUNT CARMEL.

MOUNT Carmel is frequently mentioned in the Old Testament. Its ancient beauty is there often noticed. We read of the *excellency*\* of Carmel; and in the Song of Solomon, where the spiritual graces of the Christian Church are set forth under the similitude of natural beauties, we find her glory and dignity likened to the majesty of Carmel.

The prosperity or adversity of Israel is also represented by the fruitfulness or barrenness of Carmel. Thus, when foretelling God's judgments upon their nation, the prophet speaks of Carmel as *shaking off her fruits*,

\* The name Carmel means "excellent vineyard," "vineyard of God;" also "harvest," "full ears of corn."

as *languishing* and *withering*; whilst future blessings were promised under the figure of a flock feeding peacefully on its goodly pastures.

In order to form an idea of the effect which such words would produce on an Israelite, we must bear in mind that almost every natural object around him was rendered sacred by its connection with some miracle or deliverance which God had wrought for his people through the instrumentality of their prophets and kings.

Such wonders had been worked on Carmel; and when the prophet pointed to its goodly top and fruitful sides (for it was the finest mountain in all Palestine), and bade the people picture it to themselves barren and desolate, with what fearful force would the prophecy come home to them, that as they had been like Carmel in glory, so should they be like Carmel cursed!

And when a captive, in a distant land, the afflicted Jew thought of his home and his country, and remembered Carmel, and the peaceful flocks feeding on its sides, how cheering would he find the promise, that he should return again to his habitation, and rest and feed on Carmel!

Carmel signifies the *vineyard*; and Jerome informs us that this mountain had good pastures. Here king Uzziah had *vinedressers* and husbandmen, "for he loved husbandry." Carmel is likewise said to mean *plantations, bushy* shrubberies, which, there is sufficient proof, formerly covered this mountain. The name Carmel is sometimes given to places planted with vines and fruit-trees, and *remarkable for fertility*.

"This mountain, the boundary of the possessions of Asher westward,\* forms one of the most remarkable headlands on the whole coast of the Mediterranean. Although mentioned as a single mountain in the Scriptures, it is a straight and regular mountainous ridge, extending from eight or ten to fifteen miles from south-east to north-west; while to its more elevated part, which rises in the form of a flattened cone, and is about fifteen hundred feet in height, the name Mount Carmel is commonly applied by way of eminence. The river Kishon falls into the Mediterranean on the north side of Carmel."

"At its north end," writes Mr. Paxton, "it forms an abrupt termination in a bold promontory (advancing considerably into the sea). On the top of this promontory, and near the end, is a ~~monastery~~, which has an imposing appearance, but I could see no other human habitation near it. At the distance of eight or nine miles from the promontory, the ridge called Carmel suddenly sinks down, and gives place to a wide-spread plain (the celebrated plain of Sharon). Near the south end of the mountain, they point out on the shore the site of the famous city of Cæsarea..."

"There is a plain of varied width between Carmel and the shore. It is almost wholly destitute of trees, hardly a bush to be seen, unless of a very small size. The plain varies in width from one to two miles. Much of it was covered with sand. I saw no human being, or human habitation on it, except a few old ruins."

"The excellency of Carmel has also passed away, and the prophet's curse has fallen upon it,—and the top of Carmel has withered. Its steep sides are often barren and desolate—yet not so desolate as some have alleged. Wild vines and olives (showing that it had formerly been cultivated) are met with among the *brambles*,—and oaks and vines and even some cedars grow,—to attest its former luxuriance. Shepherds, too, find on its sides pasture for their flocks, as when Amos described it as their 'habitation.'"

\* Josh. xix. 26.

"The lesser mountains of this group," writes D'Arvieux, "are cultivable lands, of a good soil, deep and *extraordinarily* fertile, capable of producing in a very uncommon degree. There were formerly many more *vineyards* than at present. The Christians who inhabit part of these villages only cultivate as many vines as may furnish what wine and dried grapes they want for their own consumption. They neglect the cultivation of fruit-trees, which here would reach *great excellence*, as may easily be inferred from those here gathered, though chiefly from wild stocks. They have delicious melons and water-melons. Those mounts which appear most dry and arid are covered with oaks and other trees. We find also olives, *but under no management*. The air of these mountains is very good; and how sultry soever it may be on the border of the sea, these regions are refreshed every morning by a cool sea breeze. On the mountains feed numbers of beesves, sheep, goats, hares, rabbits, partridges, antelopes, and other species of animals, all excellent in their kinds, because they here find *excellent pasture* and *corn*."

What a commentary is this upon the prophet's words, when he speaks of the *excellency of Carmel and of its languishing!*

"Carmel is no place," says Mr. Carne, "for crags and precipices, or rocks of the wild goats; it is the finest and most beautiful mountain in Palestine,—in many parts covered with trees and flowers. On reaching at last the opposite summit, and coming out of a wood, we saw the celebrated plain of Esdraelon beneath, with the river Kishon flowing through it. Mounts Tabor and (the little) Ieronon were in front, and on the left the prospect was bounded by the hills of Samaria."

Lamartine thus describes a storm on Mount Carmel:—"I have witnessed few so terrible. The clouds rose perpendicularly, like towers above Mount Carmel, and soon covered all the length of the summit of this chain of hills. The mountain, just now so brilliant and serene, was plunged by degrees in rolling waves of darkness, split here and there by trains of fire. The horizon seemed to close around us,—the thunder did not burst in claps—it threw out one single majestic rolling, continual and deafening. The lightning might be truly said to rush like torrents of fire from the heavens, on the black flanks of Carmel. The oaks on the Mount and on the hill on which we were journeying, bent like young plants. The winds, which rushed from the caverns, and from between the hills, must have swept us from our horses, if we had not speedily alighted, and found a little shelter behind a fragment of rock in the then dry bed of a torrent. The withered leaves, upraised in masses by the storm, were carried above our heads like clouds, and the slender, broken branches of the trees showered around us. I remembered the Bible, and the prodigies of Elijah... The storm abated in about half an hour. We continued our route along the foot of Mount Carmel, which we traced in this way, during a march of about four hours. It presented everywhere the same severe and solemn aspect. It is a gigantic rock, rising almost perpendicularly, and everywhere covered by a bed of shrubs and odoriferous herbs. The rock is seldom entirely naked."

"In Leviticus xxvi. 22, we read that wild beasts were to be sent amongst the people of that land for their iniquities; even that seems well nigh its accomplishment. The monks of Mount Carmel reported, that in consequence of the disarming of the people, and the great decrease of their numbers, wild beasts were increasing on Mount Carmel to an alarming degree."

"We may stand at the top of Carmel," observes Mr. Hardy, "as did

Gehazi, and look towards the sea, but, alas! there is now no 'little cloud like a man's hand,' still there is the promise of a shower, and in due time the streams of divine mercy will again fall upon this thirsty land, and men shall liken themselves in their prosperity to the 'excellency of Carmel and Sharon.'"



VIEW FROM CARMEL.

#### EVIL EFFECTS OF COMBINATIONS.

It would be an object of national utility could the truth be impressed on the minds of the working classes, that their combinations, in place of being advantageous, have almost invariably proved prejudicial to themselves.

In the first place, they are a perpetual drain upon their earnings. Each member of a union is required to pay a given sum out of his wages, varying from 3*d.* to 1*s.*, 2*s.* and even as much as 5*s.* weekly.

When on strike, the regulations generally are, that workmen shall receive from 7*s.* to 10*s.* weekly; but, in practice, they seldom get more than a mere pittance, barely enough to support existence. A large proportion of the fund thus wrung from the workpeople goes to pay secretaries and delegates, who receive from 3*s.* 6*d.* to 5*s.* a day, and have their travelling expenses paid in addition. Thus wofully do these men prey upon the resources of the workmen whom they mislead! After weeks, nay, perhaps, months of idleness and privation, they have invariably been obliged to return to their work, in many cases at less wages, but never at more than they turned out for.

In the next place, a strike invariably introduces new workmen into the trade, and thus increases the number of labourers, without, at the same time increasing the fund for their maintenance. In consequence of the turn-out at Ashton, in 1825, more than 300 persons were instructed in spinning; and every turnout has ended in a reduction of wages immediately afterwards, in consequence of the influx of fresh hands causing a superabundance of labour. Not all the violence of unionists can prevent this natural course of things from taking place. Thus is exemplified what

you have already been told, namely, "that wages can only be altered by changing the proportion between the number of labourers, and the funds set apart for their maintenance."

In the third place, strikes have been the cause of the invention and introduction of machinery, the effect of which has been to supersede the labour of men. Such was the invention of the wool-combing machine, which has enabled manufacturers to free themselves in a great measure from the dictation of those whom they employ. This occurred in consequence of a strike at the factory of a well-known manufacturer at Leeds, in 1833; and this at a time when the families employed by him were earning at the rate of nearly thirty shillings a-week. Another strike of the same kind in 1835, amongst the boiler-riveters of a Manchester manufacturer, at a time when he was under heavy engagements, produced the invention of a machine to rivet boilers by steam pressure; and such was the success of the attempt, that the master in question was enabled to proceed with his work with so increased a degree of rapidity and precision, as to dispense with the turn-outs altogether. Thus they found, to their cost and vexation, that they had for ever lost the employment of a kind and generous master.

A third instance of the same kind may also be cited, namely, the introduction of the self-acting mule, superseding the labour of the spinners. This occurred in consequence of a turn-out of these workmen in 1824, by which immense numbers of the working classes, whose labour depended upon that of the spinners, were forced to leave their employment. This machine has not only secured the trade from the frequent strikes to which it was subject, but it has proved much more economical, causing less waste, fewer breakages, and enabling the weaver to turn off more from his loom.

In the fourth place, strikes have been the cause of manufactures being altogether driven from the places where they were originally established. Of this numerous instances may be given. In consequence of the high wages demanded by the silk-weavers in Spitalfields, the manufacture was removed to Macclesfield and Paisley; and Macclesfield, in turn, has lost part of its silk trade to the benefit of Manchester, from the same causes that had before driven it from London. Some manufacturers have lately left Coventry, owing to the continual annoyances from strikes to which they were exposed in that town, and established factories in Essex. The carpet trade has been seriously injured by the strikes in Kidderminster, and has, in consequence, partly migrated to Kilmarnock. But, perhaps, Ireland has suffered more than any other country in this way, by the folly of its working population. Owing to the Union in Dublin, planks can be cut into boards nearly five per cent. cheaper in Liverpool than in that town; and, consequently, ship-building, which had long lingered in Ireland, has now deserted the shores of that island almost entirely. Some time ago, an Irish manufacturer required for his business several large metal utensils, and being desirous that his own country should have the profit of supplying them, he called upon the master of some iron works, and stated his readiness to sacrifice a considerable per centage, rather than that the order should be sent from the country. The master informed him that he was incapacitated from manufacturing the articles, even at the proposed advance of price; and that he was prevented from competing with his English rivals, not from any want of coal, or from any local advantages that were possessed on the other side of the channel, but solely on account of the combinations by which he was beset. The result was, that the manufacturer was obliged to have recourse to the English market. \*

An extensive iron-master in Dublin, Mr. R., constructed several years ago a machine for the manufacture of nails; the nail-makers determined to prevent its use, and got the workmen in those trades in which nails are used, to pass a resolution that they would not work with any that had been made by this machine. Consequently, machine-made nails from Birmingham quickly drove the Dublin ones out of the market; the manufacture of nails left the latter place altogether, and has, I believe, never returned. The blanket manufacture at Kilkenny has almost entirely left that town, because, as soon as the workpeople discovered that a manufacturer had a contract for making blankets, or that there was a demand for goods, they immediately struck, and would not work unless for very high prices: hence the manufacturers were unable to enter into contracts lest they should be disappointed, and the manufacture went down altogether. In 1821, the colonel of a regiment of dragoons gave an order for some saddles to an army accoutrement maker in Dublin. The master-saddlers in that city, on learning the circumstance, declared it was an encroachment upon their trade, and incited the journeymen who were to perform the work to turn out against their master, who was in consequence, compelled to give up the contract. The saddlers, however, did not profit by their conduct, as none of them got the order, which was thus lost to Ireland altogether.

#### JOSEPH ADDISON.



**JOSEPH ADDISON** the son of Launcelot Addison, D.D., was born on the 11th of May 1672, at Milston, a village in Wiltshire. His father, the rector of that place, and afterwards prebendary of Sarum, dean of Lichfield, and Archdeacon of Coventry, was a man of great natural abilities, and author of several works, which evince that his literary attainments were of no ordinary character. The subject of this memoir received the first rudiments of education at the place of his nativity, under the tuition of Mr. Naish, a clergyman, but was soon removed to Salisbury, and from thence to the Charter-house. At fifteen he was entered at Queen's College, Oxford, where he applied very closely to the study of classical learning, in which he made a surprising proficiency.

In the year 1687, Dr. Lancaster, dean of Magdalen College, having, by chance, seen a Latin poem of Addison's, was so pleased with it that he immediately got him elected into that college, where he took the degrees of Bachelor and Master of Arts. His Latin pieces, in the course of a few years, were exceedingly admired in both the Universities, nor were they less esteemed abroad, particularly by Boileau, the celebrated French author,

who was first led to think highly of the English genius for poetry by their perusal. He published nothing in English before the twenty-second year of his age, when there appeared a copy of verses written by him to Dryden, which met with great approbation from the best judges.

At the Charter-house school he first formed that intimacy with Sir Richard Steele, which their joint literary labours afterwards so effectually recorded. Addison was strongly pressed, when at the university, to enter into holy orders, and had once resolved upon doing so; but his great modesty, his natural diffidence, and an uncommonly-delicate sense of the importance of the sacred office, joined to the advice of his friend, Mr. Montague, the Chancellor of the Exchequer, made him afterwards alter his resolution. Having expressed to one of his patrons, Sir John Somers, a great inclination to travel, that gentleman, by his interest, procured him a pension from government of three hundred pounds a-year to defray his expenses. He accordingly made a tour to Italy in the year 1699, and two years after wrote a poetical epistle from that country to the Earl of Halifax. In 1702 he was about to return to England, when he received an appointment to attend Prince Eugene, then in command of the Imperial troops in Italy; but the death of William the Third happening soon after, put an end to this affair, as well as to his pension, and he remained a considerable time unemployed. During this period, however, Addison was not idle, but sedulously applied himself to the cultivation of his mind, until at length an unexpected incident gave him an opportunity of displaying his talents to advantage. Lord Godolphin, happening to complain to Lord Halifax that the Duke of Marlborough's victory at Blenheim had never been celebrated in verse in the manner it deserved, asked that nobleman if he could name a person capable of doing justice to the subject. Lord Halifax replied that he did know of such a person, but refused to mention him, "Because," he added, "I have long seen with indignation, men of no merit maintained in luxury at the public expense, while those of real worth and modesty are suffered to languish in want and obscurity."

To this the Lord Treasurer answered that he was sorry there should be occasion for such a remark, but that he would do his best to wipe off such reproaches for the future; and, on his pledging his honour that whoever his lordship named as adequate to the task should be suitably recompensed, Lord Halifax mentioned Addison.

The proposal was, by direction of the Treasurer, made to our author by Mr. Boyle, in so polite and flattering a manner, that he readily accepted it. Lord Godolphin having seen the first part of the work before the whole was finished, was so pleased with it, that he appointed him Commissioner of Appeals.

The ensuing year, he accompanied Lord Halifax into Holland, and in 1706 was made private secretary to the Secretary of State, in which office he acquitted himself ably.

About this time, there being a great taste for Italian operas, he wrote the opera of "Rosamond," wishing to try the effect that a composition of this sort with English words would have upon the stage; but, probably owing to the badness of the music to which it was adapted, this undertaking did not succeed.

On the 1st of March 1711, the first number of the "Spectator" made its appearance. Of the extraordinary popularity of this celebrated periodical, the fact that more than twenty thousand copies were often sold in one day would alone bear sufficient testimony.

But although his literary fame was raised very high by the publication of the "Tatler" and "Spectator," the former of which works is supposed to have been commenced by his friend Steele whilst he was in Ireland, without his knowledge, yet it was not until the appearance of "Cato" that his reputation reached its greatest height. This celebrated tragedy was planned by the author when he was very young, and principally written abroad. For a long time he had no intention of bringing it forward on the stage, but at length, yielding to the earnest and frequently repeated solicitations of his friends, it was exhibited at the theatre, with a prologue written by Pope. It met with uncommon success, being played thirty-five nights without interruption, and then discontinued only on account of the illness of one of the principal actors. "Cato" was no less admired on the Continent, having been translated into French, Italian, and German. It was acted at Leghorn, and several other places, with immense applause; and the Jesuits of St. Omer made a Latin version of it, which was got up with great magnificence, and acted by the students of the college.

Before the arrival of George the First, Addison was made Secretary to the Regency, and was required by his office to send notice to that monarch of the death of Queen Anne, and the vacancy of the throne of England. He was so long in performing this, thinking that such a subject required so much consideration as to the best manner of expressing it, and was so perplexed with the choice of terms, that the lords, who could not be thus kept waiting, called a man of the name of Southwell, a clerk in the house, and desired him to despatch the message. Southwell readily wrote what was necessary, in the common-place style of business and boasted that he had performed what was too difficult for Addison. A striking instance of absurd and overweening self-conceit is here afforded us; and it may also be remarked how much more frequently this defect is found in ignorant and inferior minds than in those who are justly distinguished above the common herd for wisdom and learning.

In 1716 Addison married the widow of the Earl of Warwick, whom he had long courted. It seldom happens that unequal marriages are productive of happiness to either party; and this was exemplified in the case of Addison and his wife. He first became acquainted with her from being tutor to her son; and the lady always remembered her own rank, and treated her husband with very little consideration.

The year after this ill-assorted union Addison rose to his highest elevation, being made Secretary of State, but appears to have proved himself unequal to the duties of his situation. Having no powers of oratory, he could not speak in the House of Commons; and in the office he could not issue an order without losing his time, and causing inconvenient delay, by waiting to express it in fine and elaborate language. Finding, by experience, his utter inability for public business, he solicited his dismission, which was granted, with a pension of 1,500*l.* a year.

In his retirement, although suffering from declining health, he applied himself with diligence to the completion of a work entitled "Evidences of the Christian Religion," and intended to have made an English paraphrase of some of the Psalms. But his complaints, asthma and dropsy, increased, and he was forced, reluctantly, to abandon his designs. He died on the 17th of June 1719, at Holland House, in the forty-eighth year of his age.

Pope relates, that during his last illness, he sent for the poet Gay, who had not visited him for some time before. Addison told him that he had injured him, but that, if he recovered, he would make him full amends.

What this injury was he did not explain, nor did Gay himself ever know. It is supposed, however, that some piece of preferment intended for Gay was withheld in consequence of Addison's interference. Another death-bed interview, of a more solemn nature, is also recorded. It should first be mentioned that his son-in-law, Lord Warwick, was a very wild young man, of libertine and irregular habits, and possessing no fixed principles. He, notwithstanding, entertained sentiments of considerable respect for Addison, who had used great exertions to reclaim him; but his good advice and kind admonitions had no effect upon the young man. Determined to try once more, Addison, when he found that he had but a short time longer to live, sent for Lord Warwick, who lost no time in hastening to his bed-side, and much affected, desired to hear his last wishes and injunctions.

"I have sent for you," said Addison, "that you may see how a Christian can die."

It would be interesting to know what effect this awful scene had upon the dissolute young earl; we may hope that it led him to serious thought and sincere repentance, but of this we have no account. It is certain that, if he proposed reformation and a change of conduct, no time was allowed him to put his good resolutions in practice, for very shortly after the death of his father-in-law he himself died.

It has been observed by several of Addison's biographers, that he employed wit on the side of virtue and religion. His writings did much towards improving the depraved manners, and checking the vicious habits, prevalent in his day, and mingled instruction with amusement in a striking degree.

He had the distinguished merit of being the first author who sought to reform and improve the age in which he lived, by boldly censuring its vices and exposing its follies, yet in so clever and agreeable a manner as to render his writings eagerly perused by all classes.

Dr. Johnson says, in his Life of this great man, "Before the 'Tatler' and 'Spectator,' if the writers for the theatre are excepted, England had no masters of common life. We had many books to teach us our more important duties, and to settle opinions in Philosophy or Politics, but an *Arbiter Elegantiarum*, a judge of propriety, was yet wanting, who should survey the tract of daily conversation, and free it from thorns and prickles which tease the passer, though they do not wound him."

"For this purpose," he adds, "nothing is so proper as the frequent publication of short papers, which we read not as study but amusement. If the subject be slight, the treatise is short. The busy may find time, and the idle may find patience."

One of his contemporaries relates an anecdote of him, which may amuse our readers. Addison was very intimate with Mr. Temple Stanyan, author of a history of Greece. In the familiar conversations which the two friends frequently had together, they were accustomed to dispute each other's opinions, without reserve. It once happened that Addison lent Mr. Stanyan five hundred pounds. After this, Stanyan, instead of conversing with the same frankness and canvassing his friend's opinions with the same freedom as formerly, became constrained, deferential, and timid in his manner. This change gave Addison great uneasiness. Matters had continued thus some time, when one day, in discoursing together, a subject was introduced on which Stanyan had been used strenuously to oppose his friend's opinion; but now, even upon this point, he gave way to what Addison advanced, without attempting to dispute what he said, or interposing his own view of the case.

This annoyed and hurt Addison so much, that he exclaimed, " Either contradict me, or pay me the money!"

There is much in the character of Addison that merits our admiration. Among his many good qualities may be mentioned a high sense of honour and unimpeachable integrity, although tempting bribes were frequently offered him by those who wished to secure his assistance and interest with the Court.

The following letter affords so pleasing an illustration of his feeling upon one of these occasions, that we will conclude this short memoir by quoting it. It relates to the case of a Major Dunbar, whom he had sought to serve when in Ireland by his interest with Lord Sunderland, and from whom he had previously refused to accept, first, a three hundred pound bank note, and then a diamond ring of the same value.

"Sir.—I find there is a very strong opposition formed against you, but I shall wait on my lord lieutenant this morning, and lay your case before him as advantageously as I can, if he is not engaged with other company. I am afraid what you say of his Grace does not portend you any good. And now, sir, believe me, when I assure you, that I never did, nor ever will, on any pretence whatsoever, take more than the stated and customary fees of my office. I might keep the contrary practice concealed from the world, were I capable of it, but I could not from myself; and I hope I shall always feel the reproaches of my own heart more than those of all mankind. In the meantime, if I can serve a gentleman of merit, and such a character as you bear in the world, the satisfaction I meet with on such an occasion is always a sufficient, and the only, reward to,

"Sir, your most obedient humble servant,

"J. ADDISON."

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#### THE BEAVER.



THE Beaver (*Castor fiber*, LINN.) is found both in Europe and North America: and, as late as the twelfth century, was an inhabitant of Great Britain. On the continent of Europe it has become scarce, but in the northern parts of America it is still numerous, though immense numbers

are killed annually for their skins. Formerly from 100,000 to 200,000 beaver skins were imported yearly into Europe, but the present amount is much diminished.

The most interesting point in the history of this animal is its instinctive association for the purpose of building structures of considerable size and durability. These are habitations for winter residence, and dams for maintaining an equable depth of water. The latter are not needed when the beaver-house is erected ~~on~~ a pond or lake, or broad river; but these situations are less frequently chosen than a narrow stream, as in the latter case the current enables the animals to float down materials, besides affording them additional security. If there is a probability of the water diminishing by reason of the freezing of the source, they display wonderful sagacity in forming a dam quite across the river at some distance from their house. If the current be sluggish, the dam is nearly straight, but if it be rapid, additional strength is imparted to the structure by making it convex towards the stream. The materials used are drift-wood, or young trees cut down by the sharp cutting teeth of the Beavers, and gnawed into lengths, with mud and stones dragged from the banks and bottom, the whole intermixed without any regularity, except that which preserves the general sweep of the dam. The sticks are not forced into the bottom as has been pretended, but are laid horizontally, and are kept in their places simply by the weight of the stones and mud laid over them. "In places," says Hearne, "which have been long frequented by Beavers undisturbed, their dams, by frequent repairing, become a solid bank, capable of resisting a great force both of water and ice; and as the willow, poplar, and birch, generally take root and shoot up, they by degrees form a kind of regular planted hedge, which I have seen in some places so tall that birds have built their nests among the branches."

The huts are built in the same general manner, projecting from the bank, or from an islet in the stream; a spot being always selected where the water is at least three or four feet deep, to prevent the effects of severe frost. They are of a round form, with the summit, which rises to the height of several feet above the surface, domed over. The sides are enormously thick; Hearne speaks of one which was "more than eight feet thick in the crown." A single entrance is made, which is covered with a projecting porch; and this is invariably at some considerable distance beneath the surface. "It is a great piece of policy," remarks the accurate observer already quoted, "in these animals, to cover the outside of their houses every fall with fresh mud, and as late as possible in the autumn, even when the frost becomes pretty severe, as by this means it soon freezes as hard as a stone, and prevents their common enemy, the wolverine, from disturbing them during the winter; and as they are frequently seen to walk over their work, and sometimes to give a flap with a tail, particularly when plunging into the water, this has, without doubt, given rise to the vulgar opinion that they used their tails as a trowel, with which they plaster their houses; whereas that flapping of the tail is no more than a custom which they always preserve, even when they become tame and domestic, and more particularly so when they are startled."

The food of the Beaver consists in summer of the bark of the willow, birch, and poplar; but as in the winter the ice confines them to their habitations, or the bottom of the water, they are able to indulge in this food only so far as they have in the summer cut down green trees, and thrown them into the water in front of their door. At this season their chief

support is the fleshy root of a large species of water-lily. This root imparts a rank taste to their flesh, which is at other times in high estimation.

The Beavers which are found in the European rivers are for the most part solitary, and dwell in burrows in the banks. They have hence been supposed to be destitute of the building instinct, and therefore specifically distinct from those of America. But the recent discovery of a colony of building Beavers on a little tributary of the Elbe has dispelled this notion, for these were found to inhabit houses of eight or ten feet in height, and to have constructed a dam which raised the water more than a foot; while their work was in no way inferior to that of their western brethren.

An anecdote related by M. Geoff. St. Hilaire of a Beaver from the Rhone, which was kept in the Paris menagerie, also illustrates this instinct in an European individual. "Fresh branches were regularly put into his cage, together with his food, consisting of legumes, fruit, &c., to amuse him during the night, and minister to his gnawing propensity. He had only litter to shield him from the frost, and the door of his cage closed badly. One bitter winter night it snowed, and the snow had collected in one corner. These were all his materials, and the poor Beaver disposed of them to secure himself from the nipping air. The branches he interwove between the bars of his cage, precisely as a basket-maker would have done. In the intervals he placed his litter, his carrots, his apples, his all, fashioning each with his teeth, so as to fit them to the spaces to be filled. To stop the interstices, he covered the whole with snow, which froze in the night, and in the morning it was found that he had thus built a wall which occupied two-thirds of the doorway.\*

\* *Mém. du Mus. d'Hist. Naturelle*, xii.

#### IT WILL DO TO-MORROW.



IT is a bad plan to draw upon the future for the power to do that which we are capable of performing to-day. "Whatsoever thy hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest,"—is a maxim of wisdom and truth which none can controvert. The present, and the present only, is in any sense our own; for "The morrow is a space of time to be found only in the fool's calendar."

"It will do to-morrow." This belief, if it really amounted to any feeling of the kind, was the bane of Edward Collinson from his earliest youth. Whatever depended upon himself was invariably deferred; in consequence of which he was, what he termed himself to be, "the most unfortunate fellow in the world, always out of luck's way,"—but one whom wiser persons than he looked upon only as the just victim of procrastination. At school he never distinguished himself, though he had very fair abilities; and when he became a clerk in a mercantile house, he never gained a step but as he rose by regular rotation, and that simply because he failed in promptitude.

His family were respectable, but far from affluent, all the members of it being called upon to exert themselves for their own maintenance as soon as they were able. Himself and his two next brothers were provided for; it was now a great point to dispose of the fourth son suitably. Many disappointments had occurred, and but few *real* opportunities of success presented themselves. At length a vacancy took place in the house of Williams & Co., where Edward had now been fixed two or three years. His father was well known to the parties; and as he himself bore the character of a very steady young man, and in consequence stood well with his superiors, an application in favour of his brother seemed very promising. As no time was to be lost, and Mr. Collinson was unable to call upon Mr. Williams, he wrote a letter to that gentleman, strongly urging him to regard his request favourably, and committed it to the care of Edward, with a strict injunction that he should deliver it himself immediately on his reaching the house of business.

Mr. Williams happened to be later than usual before he arrived, and Edward in the meantime had been despatched to the London Docks. Here he was detained some time; then recollecting that he had omitted to call the day before on some parties connected with the firm, he still further delayed his return by going to speak to them. When he again reached — Lane, he found on inquiry that Mr. Williams was preparing to leave; still, more than sufficient time was allowed him to deliver both message and letter, as his father had desired, without intruding upon his superior's arrangements. He was preparing to step forward, when seeing Mr. Williams lock his desk, and about to take his hat, he at once changed his intention. "It will do just as well to-morrow," said he; "my father is always so pressing in these things; and Mr. Williams will not thank me for keeping him. Now a few hours can make no difference." So reasoning he put the letter into his own desk, and saw Mr. Williams depart without further concern.

The next morning he requested leave to speak to Mr. Williams almost as soon as he arrived. He presented the letter to him, and was about to deliver the message with which he was also charged, when Mr. Williams, who had glanced his eye over the contents, prevented him, by exclaiming. "How very vexatious! There is nothing that would have given me more pleasure than to have acceded to your father's wishes; if I had but known them yesterday, your brother should have had the situation. It was only this very morning, just before I left home, that a gentleman called on me in favour of his nephew, and, having no one particular in view, I promised it at once to him. Assure your father that I am really very sorry for the circumstance."

So was Edward *very sorry*; but it was of a piece with everything else he undertook; if another person had anything to do with it, he would have been certain to succeed; his old luck stood by him, if nothing else did.

Some time afterwards Mr. Williams was desirous of sending out a trust-

worthy young man to his partners abroad. Edward had always entertained a strong desire to visit foreign lands; and as peculiar advantages were attached to the present proposal, he was very eager to secure it. "Apply for it directly," was the advice of a friend; "there are several about it; but I have reason to think Mr. Williams expects you to make application for it, and would listen favourably to you." Edward professed thankfulness for the encouragement, determined on speaking immediately to Mr. Williams; and he did so; not that day indeed, there was no need for such haste as that, but on the next. \*

"Why didn't you speak to me before?" said Mr. Williams. "I have actually promised Nelson only an hour ago to send him out."

"Was there ever anything so unlucky?" said Edward, as he finished relating the circumstance to his friend by whose advice he had acted. "I am sure there is a spell against me."

And truly there was a spell against him, stronger than any incantation could make it; a spell which can render the strong man's intentions as flax, and destroy, without noise and without effort, the noblest fabric of man's wishes and intentions. If "procrastination be the thief of time," so is it also the ruin of his best-laid schemes.

When Edward had been some time longer in his present situation, his father met with losses in his profession, which ended alike in his ruin and his death. He left a widow and two daughters, totally unprovided for, and therefore dependent upon Edward as far as he was able to render them assistance. To add to his misfortunes, Mr. Williams at this time was thrown from his horse, and so much injured as to die almost immediately afterwards. The concern was soon after wound up, and Edward was left without employment. For some weeks he was thus painfully circumstanced; his old luck continuing, as he said, to follow him. Let him apply to whom, or for what he might, he was always only a few hours too late. So certain was he that it was of no use for him to seek after anything, that he really thought he might as well give himself no further trouble. At last, however, through the interest of some friends, he obtained a very good situation in a house formerly connected with the late firm of Williams & Co., in Jamaica.

Before he left the country he assured his life for as large a sum as he was able, as a provision for his mother and sisters in case of his death. "Come what will," said he to them, "I have this satisfaction, that if you lose me, you will yet have something to depend upon." It was a sad parting between him and his family, for he was very affectionate, and was tenderly loved in return by his relations. His mother, in particular, seemed to suffer at the idea of separation, and by every argument in his power he sought to soothe her, and to reconcile it to her mind. His last words to her were, "My dear mother, if I did not see you thus distressed, I should leave you with cheerfulness, because I go in the full hope of being able to assist you materially, and perhaps eventually to restore you to the position in life you have been accustomed to occupy; for who can tell? Why may I not be as successful, after all, as many others have been, and return in a few years a rich man, make your old age comfortable and happy, provide for my sisters if they should not be already provided for, and leave for ever my ill luck to the scorching sun and the yellow fever?"

So spake Edward, and his mother clung to the comfort his words imparted; she repeated them to her friends, breathed them on her pillow, and at last persuaded herself that they were prophetic. The idea soothed her; and who would have wished to substitute painful reality for pleasurable

anticipation? Our life is, indeed, but as a vapour, over which the gleamings of hope diffuse a bright though illusory splendour, cheering to the eye and soothing to the heart; and as such may well be permitted to the sufferer and the bereaved, the afflicted and the weary.

Edward's "ill luck," however, on many occasions continued to follow him. Once in particular he had nearly lost his situation through his pertinacious belief that to-morrow would do as well as to-day. He was desired to see a person who was on the eve of sailing for England. The vessel had been detained many days by a contrary wind, and this evening there was a dead calm. It was absurd therefore to give himself any unnecessary trouble about the matter; there lay the vessel, and there it would lie; he would execute his orders early the next morning. But a breeze sprang up in the night, and increased to a steady and favourable gale; and when Edward, as soon as he rose, looked out of his window, the fluttering steamer was all that was visible to his eye. Would this have happened to any other person? No; he was sure it would not. No matter where he went, he believed, he always was, and he feared always would be, the most unlucky fellow in the world.

In the meantime his mother and sisters, in spite of the assistance he gave them, and which, to his credit be it recorded, was to the utmost extent of his power, experienced much discomfort, and were compelled to endure many privations. All exerted themselves for a maintenance; but females are sadly circumscribed in this respect, and their most strenuous efforts are often insufficient to procure more than a miserable pittance. To add to their troubles, Mrs. Collinson's health began to fail; and there were necessaries as well as indulgencies, the want of which was severly felt. Much as they concealed from their brother, a tone of melancholy, if not despondency, began to show itself in his sisters letters.

One of the partners of the house, Mr. Mason, pleased with Edward's amiable manners and correct conduct, took a great liking to him, and showed him on all occasions marked kindness. There was no reserve in Edward's disposition; and, won by Mr. Mason's condescension, he soon communicated to him all the circumstances of himself and family. With a generosity that distinguished him, that gentleman, on hearing of Mrs. Collinson's illness, immediately advanced him a sum of money for her use. Nothing could have come more opportunely than this loan. He had remitted nearly all his quarter's salary to his mother by the last packet, and the premium of his assurance was now due. If he recollects right, he had yet a few days' grace; he would look when he reached his lodgings, and if necessary he would call at the office and pay it, perhaps that evening, or as soon after as possible. He searched for the notice, but was unable to find it; no matter, he would stop on his way to business in the morning, and pay the premium at once. He did so—not that day but on the following. "Your policy expired yesterday," was the reply of the clerk to whom he tendered the money. "I am very sorry; but it is no fault of ours; the proper notice was given you."

"This is the crowning height of my ill luck," cried Edward; "never was such an unlucky wight born as my unfortunate self." And with a heavy heart he entered the office, and seated himself at his desk. There, to his surprise, lay a letter directed to him; it having been transmitted by the writer to the care of Messrs. Warren & Mason. He opened it; when what was his astonishment and delight when he found it to be an official letter from a solicitor, informing him that a distant relation of his name,

whose death he announced, had left him sole heir to his property, which was something considerable; in the event, however, of his dying without issue, a more distant branch still than himself was to inherit it. As Mr. Collinson had died in a distant colony, four months had elapsed since the news had reached England; in consequence of which, a pretty large sum of ready money was at Edward's disposal at the present time.

With a heart bounding with pleasure and gratitude he hastened to Mr. Mason, and put the letter into his hand. The kind-hearted man having read it, warmly congratulated him on his good fortune.

"O! it is not for myself," cried Edward, "that I feel thus happy. My mother, my dear mother and sisters!"—the tears rushed into his eyes, and he paused;—"they shall now be as independent as myself," he resumed with cheerful voice; "for you will observe, Sir, that I have it now in my power to provide handsomely for them."

"Lose no time, then," returned Mr. Mason; "the sooner you execute your intentions the better."

"I will give the necessary instructions immediately," cried Edward; "I will see Mr. Pearson about it to-morrow."

"To-morrow!" repeated Mr. Mason, fixing his eyes upon him with a grave and almost stern expression of countenance; "there is no to-morrow, Sir, in a climate like this, both you and I may be inhabitants of another world before the close of another day. Till something better can be done, write a memorandum of your intentions, and have it attested before you close your eyes." Edward promised to do so—took out his papers—reflected for a few moments how he should express himself—made a commencement—thought himself not quite well—he could do what he wished better after a night's rest. He threw down his pen, and retired to bed.

The next morning Edward's seat was vacant. Mr. Mason sent to his lodgings—he had been attacked with fever, and was even then in imminent danger. The best medical advice was procured, but in vain; in a few hours he breathed his last, and "to-morrow's" sun shone on his grave.

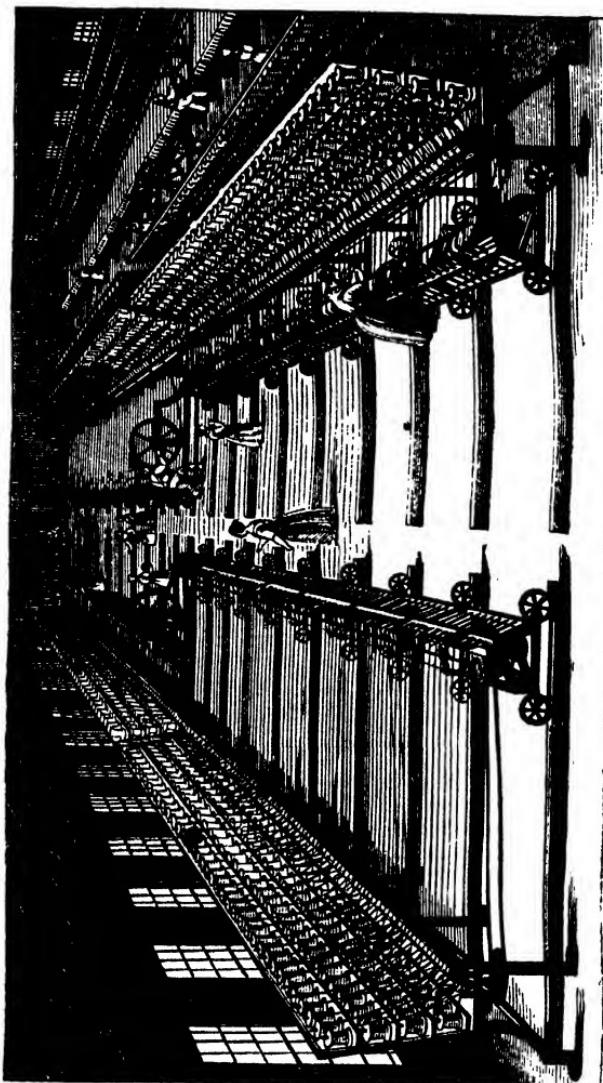
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#### MAN.

OH! what is man, great Maker of Mankind!  
That thou to him so great respect dost bear:  
That thou adorn'st him with so bright a mind,  
Mak'st him a king, and ev'n an angel's peer?  
  
Oh! what a lively life, what heavenly pow'r,  
What spreading virtue, what a sparkling fire;  
How great, how plentiful, how rich a dow'r,  
Dost thou within this dying flesh inspire?  
  
Thou leav'st thy print in other works of thine,  
But thy whole image thou in man hast writ;  
There cannot be a creature more divine,  
Except, like thee, it should be infinite.  
  
But it exceeds man's thought, to think how high  
God hath rais'd man, since God a man became;  
The angels do admire this mystery,  
And are astonish'd when they view the same.  
  
Nor hath he given these blessings for a day,  
Nor made them on the body's life depend:  
The soul tho' made in time, survives for aye;  
And tho' it hath beginning, sees no end.

SIR JOHN DAVIES.

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.



MULE SPINNING.

## MANUFACTURE OF COTTON YARN.

## PART II.

THE locality of a manufacture is usually determined by the facility with which water-power, fuel, and iron can be obtained; for, where they

are abundant, machinery can be made and put in motion at small cost: and, in this respect, many parts of Lancashire and its neighbourhood are highly favoured. There is perhaps no spot of ground in the world more advantageously situated for manufactures

than the tract lying between the Ribble and the Mersey. The neighbouring hills pour down a number of rapid streams, which furnish water-power to many hundred mills, feed navigable canals, supply water for scouring, bleaching, printing, dyeing, and other processes. The river Irwell is said to be "the hardest-worked river in the universe;" for, besides washing, bleaching, dyeing, &c., it is calculated to move, with its tributaries, not fewer than three hundred water-wheels, some of which are of very large size. South Lancashire is rich in coal-fields, which are worked with great ease and economy; the neighbouring counties furnish abundance of iron; the great sea-port of Liverpool supplies the raw material, and exports the beautiful fabrics produced in this industrious district.\*

Here it is that the cotton-factories are principally situated,—those stupendous buildings which fill the mind with astonishment, until their internal arrangements are inspected and understood, and then with admiration and delight. Whether the power be steam or water, the plan of the building is the same. A cotton factory is a huge square structure, often containing seven or eight stories, the rooms of which may be two or three hundred feet in length, lighted by numerous windows, which have a singularly picturesque appearance by night, when seen from without. "The operations carried on within its walls," says Mr. Baines, "are numerous, and every one of them is performed by machinery, without the help of human hands, except merely in transferring the material from one machine to another. It is by iron fingers, teeth and wheels, moving with exhaustless energy and devouring speed, that the cotton is opened, cleaned, spread, carded, drawn, roved, spun, wound, warped, dressed, and woven. The various machines are proportioned to each other, in regard to their capability of work, and they are so placed in the mill as to allow the material to be carried from stage to stage with the least possible loss of time. All

are moving at once, the operations chasing each other; and all derive their motion from the mighty engine, which, firmly seated in the lower part of the building, and constantly fed with water and fuel, toils through the day with the strength of perhaps a hundred horses. Men, in the meanwhile, have merely to attend on this wonderful series of mechanism, to supply it with work, to oil its joints, and to check its slight and unfrequent irregularities; each workman performing, or rather superintending, as much work as could have been done by two or three hundred men sixty years ago. At the approach of darkness, the building is illuminated by jets of flame, whose brilliance mimics the light of day, the produce of an invisible vapour generated on this spot. When it is remembered that all these inventions have been made within the last seventy years, it must be acknowledged that the cotton mill presents the most striking example of the dominion obtained by human science over the powers of nature, of which modern times can boast. That this vast aggregate of important discoveries and inventions should, with scarcely an exception, have proceeded from English genius, must be a reflection highly satisfactory to every Englishman."

#### SORTING THE COTTON, WILLOWING, BATTING, BLOWING, AND LAPPING.

The importers of cotton employ certain brokers in Liverpool, who set a value upon the sample, and find purchasers to any amount. The buyers, who are the spinners all over the country, and the Manchester cotton dealers, also employ brokers to make their purchases. The brokers charge, both to seller and buyer, a commission of ten shillings for every hundred pounds worth of cotton.

The cotton is seldom unpacked until it arrives at the mill, the purchases being all managed by samples. When it is unpacked, the first thing to be done is the sorting, and in this much care and skill are required; for the different bags furnish different qualities of cotton, and it is necessary to produce yarn of uniform quality, at

\* A considerable quantity of manufactured cotton goods is also exported from the ports of London, Hull, Bristol, and Newcastle-upon-Tyne.

the cheapest rate. In order, therefore, to equalize the different qualities, the contents of all the bags are mixed together in the following manner. A space being cleared and marked out on the floor, the cotton contained in the first bag is scattered over this space, so as exactly to cover it ; the contents of the second bag are, in like manner, spread over the first, and the cotton in all the other bags is disposed in a similar manner ; men and boys tread down the heap, which is called a *bing* or *bunker*, until at length it rises up in shape and dimensions very much like a large hay-stack. Whenever a supply of cotton is taken from the bing, it is torn down with a rake from top to bottom, by which means it is evident the contents of the different bags are collected together in a mass of uniform quality and colour. In mixing different qualities of cotton, it is usual to bring together such only as have a similar length of staple. A portion of the waste cotton of the mill is also mixed in the bing, for making the lower qualities of yarn. For higher numbers, as well as for warps, a finer quality of cotton must be selected ; and thus it will be seen that the formation of the bing is an important operation, the quality of the goods produced depending upon it.

In this state the cotton contains sand, dirt, and other impurities, and the fibres are matted together by the pressure they were subjected to in packing. To open the fibres, and get rid of the sand, &c., the cotton is put

into a machine called a *willow*. This consists of a box or case, containing a conical wooden beam, studded over with iron spikes : this beam is made to turn round five or six hundred times in a minute. The cotton, as it is torn down from the bing, is put in at one end of the machine, where it is caught by the spikes, tossed about and shaken with great violence, and gradually driven forward to the other end. The sand and other heavy impurities fall out of the machine, through an open grating at the bottom; the dust and lighter matters pass off through a series of wire openings, and the cleaned cotton is sent down a shoot into the room below.

If the cotton is of fine quality, it is beaten, or *batted*, with hazel or holly twigs. For this purpose, it is spread upon a frame, the upper part of which is made of cords, and is quite elastic. A woman, with a rod about three or four feet long in each hand, beats the cotton with great violence, producing a similar effect to the bow-string of the Hindoo. Any loose impurities which remain fall out between the cords ; seeds, and fragments of seed-pods, which adhere to the cotton somewhat firmly, are picked out by hand. By this method, the tangled locks disappear, the cotton is thoroughly opened, and made quite clean, without injuring the staple.

The coarser qualities are passed at once from the willow to the *scutching* or *blowing* machine, which does the work of batting, only in a more violent



BATTING.

manner, and is, therefore, not adapted for fine qualities; but, in coarser spinning, is in general use to prepare the cotton for the carding-engine, as was the case at one of the mills visited by the writer. The cotton, as it was shot down from the willow, was received upon an endless band, called a *creeper*, ingeniously covered with laths of wood moving upon rollers: it supplied cotton to the various blowing-machines placed at equal distances across a long room. Each machine was attended by two lads, one of whom weighed a portion of the cotton, while the other spread it upon an endless band employed to feed the machine. This band was also formed of laths, placed crossways and fastened together, in preference to cloth, which is apt to sink along the middle, and thus feed the machine irregularly. Two or three of the laths were painted black, for the purpose of dividing the surface of the feeder into two or three equal parts. The feeder being constantly urged, with a slow motion, towards the mouth of the machine, it was the duty of the attendant, as soon as a black lath appeared, to begin to spread the weighed quantity of cotton, and to make it cover the whole surface until another black lath appeared: he was then ready to spread another weight of cotton. Thus, while one part of the feeder is constantly supplying the insatiable appetite of the machine, another part returns for a fresh supply. As soon as the cotton enters the jaws of the machine, it is seized by two rollers, and immediately exposed to the blows of the *batting-arm*, or beater, which is turned round with great velocity within a kind of drum, of which the arms of the beater form the diameter. The solid impurities fall through a grating, but the dust and lighter matters are sucked up through a shoot, in which the air is rarefied by a revolving fan. The wind produced by the batting-arm drives the light cotton filaments onward, where they are assaulted by another batting-arm: they are again urged forward, and blown with tolerable regularity over the surface of a wire-gauze drum, which is constantly revolving. Beneath this drum, and in close contact with it, is an endless band moving on rollers, which receives

the cotton, and conveys it out of the machine. The pressure of the drum upon the band condenses the cotton into a filmy sheet; that is, the fibres cling together sufficiently to allow the cotton to be wound upon an iron rod as it leaves the machine, and in this state it is called a *lap*. The advantage of this is, that a uniform thickness can be presented to the carding-engine, which is a necessary condition.

In spinning fine yarns, this method of preparing the laps does not answer so well as forming them by hand. This practice was introduced by Arkwright, and it is done in various ways. In Mr. Houldsworth's mill, at the time of the writer's visit, the following method was adopted:—A boy was furnished with two qualities of cotton, contained in separate baskets: from one of these he took a certain quantity, and put it, together with a weight which hung from the beam of the scale, into the pan until the scale went down; the weight was then taken out, and its equivalent made up from the second basket.\* The cotton thus weighed was taken to a canvass strip, one half of which was extended along a kind of frame near the wall, while the other half rested on the floor. The lad distributed the cotton over this cloth, batting and slightly raising it with a rod, and then flattening it with a kind of fan formed by the union of five rods. The boy then rolled upon an



FANS USED IN BATTING AND LAPPING.

iron spindle the portion of the cloth covered with cotton, and, in doing so, dragged upon the frame the remaining half, which was in like manner covered

\* By this method cotton of various degrees of fineness may be mixed in any proportion. Suppose, for example, the manufacturer wishes to produce yarn from two qualities of cotton in the proportion of 3 of one to 2 of the other. The large scale weight will be  $1\frac{1}{2}$  or  $\frac{3}{2}$ . He first puts a small weight equal to  $\frac{1}{2}$  into the scale pan, with the first lot of cotton, and thus gets  $\frac{1}{2}$  of the quantity required; then taking out the weight he adds cotton from the second basket, to the value of  $\frac{2}{3}$  or  $\frac{1}{3}$ .



FORMING LAPS BY HAND.

with cotton, and rolled up. The laps thus formed were placed in a heap in the lower part of the frame, ready for the carding-engine. In forming these laps the greatest precision is required, because the size of the yarn to be produced depends upon the quantity of cotton spread over a given surface, and any irregularity in the spreading is likely to interfere with the uniform thickness of the yarn. As the cotton varies slightly in weight, according as the weather is wet or dry, it is sometimes usual to weigh it with a cotton weight, formed by packing a quantity of cotton into a hollow copper tube or ball, pierced with holes. As this weight is about as much affected by changes in the weather as the cotton itself, an equality is thus preserved in forming the laps.

#### CARDING.

The cotton, which is still in a confused and tangled state, has now to be carded, upon the regularity and perfection of which process depends much of the success of spinning, and also of the beauty and durability of the stuff to be woven. It has been already explained, that a cotton card is a sort of brush, containing wires instead of bristles. The cards are made of bands or fillets of leather,\* pierced with numerous holes, in which are fixed

bent pieces of iron wire, called dents or teeth. Each piece of wire, by being bent, forms two teeth; thus: These must be of equal size and shape; they must stand at equal distances, and be equally inclined to the curved surface of the drum, round which the cards are to be lapped. The leather must also be of the same thickness throughout, or the teeth will not stand at precisely the same height.

When cards were made by hand, it was quite impossible to comply with these conditions, all of which are necessary to good carding. Much ingenuity has been exercised in producing a *card-making machine*, which the writer had an opportunity of inspecting at the works of Messrs. Curtis and Co., at Manchester; but it would be difficult to give more than a general idea of this wonderful piece of mechanism. The leather is first prepared by a machine, which cuts it into sheets and fillets of the proper length and breadth; each fillet is wetted and stretched to its full extent, so as to produce an even surface; it is then passed between rollers, against a nicely-adjusted knife-edge, which shaves it down to a perfectly uniform thickness. The fillet is then wound upon a roller, and made to pass between two guide-rollers, to a receiving-roller above the card-making machine, when the fillet is held fast and stretched by a clamp. The wire of which the teeth are to

\* By a recent improvement, the cards are formed of alternate layers of cotton, linen, and Indian-rubber.

be made is supplied from a drum placed at the side.

Matters being thus arranged, the machine performs its work in the following order:—Two prickers advance, and make two holes in the surface of the leather; a pair of sliding pincers next seize the wire, and wind off from the drum a length exactly sufficient for two teeth; a tongue of steel holds this piece of wire exactly in the middle, while a knife advances and cuts it off from that part of the wire held in the pincers. Steel fingers next advance, bend the piece of wire just cut off, and carry it forward to the holes previously made by the prickers. The points of the wire are seized on the opposite side of the leather, and a bar rises up and bends the two limbs so as to form a knee in each. A pusher then acts from the opposite side, and drives home the wire into the leather, which is then shifted by the guide rollers, and another wire is inserted as before.

When this machine works at its ordinary speed, it is quite impossible to follow its various complicated movements, for it puts in two hundred teeth every minute, completing a length of twenty feet of card in a day; but the superintendent was so kind as to put the machine out of gear with the steam engine (which works ninety card-making machines in one room) and to turn it slowly by hand, whereby its beautiful movements were made intelligible. What adds apparently to the complexity of the machine, is the necessity of making cards for some purposes *ribbed*, that is, arranging the wires in lines crossing the fillet; while for other purposes the cards are *twilled*, that is, the wires form oblique lines across the fillet. When the cards leave this machine, all slight inequalities are removed by grinding; and the cards, when in use, are ground down from time to time, sometimes every day, until worn out.

The appearance of the cards, and their mode of action, will be understood from the following figure. If these cards be moved in opposite directions with a tangled tuft of cotton between them, the fibres will be seized by all the teeth—those of the top card will pull them one way, those of the bottom another, by which

means all the curls and twistings of the lock will be opened and drawn



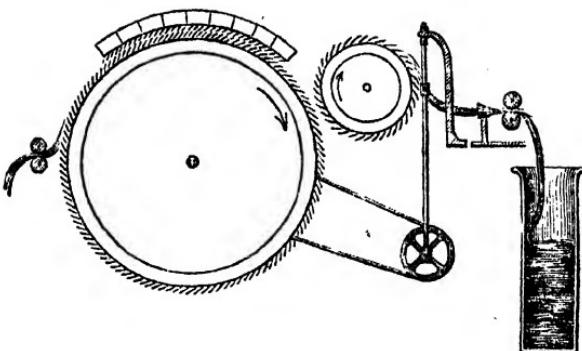
out, and the fibres made to lie side by side, or before each other. This effect may not be produced at once, but by repeatedly drawing one card over the other it will certainly be effected.

But in thus laying the fibres side by side, and end to end, each card takes up a portion of the cotton. To get the whole of the cotton upon one card, all that is necessary is to reverse the position of the two, and to place them as shown in the following figure, where



it will be seen that by drawing the upper card over the lower one, the teeth of the latter can offer no resistance, and thus it is stripped of its cotton.

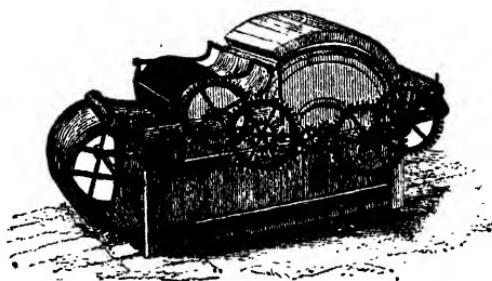
In the carding-engine this principle is carried out on a large scale. A drum about three or four feet in diameter, and three or four feet in length, moving on a horizontal axis, is covered with narrow fillet cards parallel to the axis, a small space being left between the separate fillets. The upper part of the drum is covered with a concave frame, containing narrow cards, corresponding in form to those of the cylinder. The cotton lap is supported at one end of the engine upon a roller, which, by slowly turning, assists in unfolding it. As it becomes unfolded, it passes between two fluted rollers, which are pressed together by a weight hanging from the end of the upper roller. The cotton is then caught by the wires of the main cylinder, the teeth of which, assisted by the cards of the framework, arrange the fibres of the cotton, as already explained. After this they are taken off by a second cylinder, called a doffer, which moves in a con-



trary direction, and from this the cotton is removed by a very beautiful contrivance, called the *crank and comb*.

The inventor of the carding-engine is not known with certainty. It appears, however, that in 1748, Lewis Paul patented two different machines for carding, in one of which the cards were arranged on a flat surface, and in the other on a drum. The cards were arranged parallel to each other and to the axis of the drum, a space being left between every two cards. The wool was put on by hand, and the cardings were taken off separately by a moveable comb, the spaces between the cards regulating the substance of each carding. By this method the machines had to be stopped every time the cardings were taken off, and then had to be joined end to end to form the perpetual carding. The machine was not generally known and adopted in Lancashire for more than twenty years after the date of the patent. One of the first improvements was to fix to the machine a revolving cloth or feeder, on which a

given weight of cotton wool was spread, by which it was conveyed to the machine. Arkwright further improved this by rolling up the feeder with the cotton spread upon it, as already explained, and allowing this gradually to unroll to feed the cylinder. Another improvement brought off the carded wool in a continuous fleece, forming a uniform and perpetual sliver. The doffer, which strips the wool from the large cylinder, turned off a carding of no greater length than that of the cylinder; but it was found, that by entirely covering the doffer with narrow cards, wound round in a spiral form, without having any spaces, the wool might be brought off in one unbroken fleece. But the method of stripping off the wool from the doffer was attended with many difficulties, which were at length overcome by the invention of the crank and comb. A plate of metal, finely toothed like a comb, is worked by a crank up and down over the doffer, so that, by slight and frequent strokes on the teeth of the card, it strips off the cotton in a continuous filmy fleece, which, as it



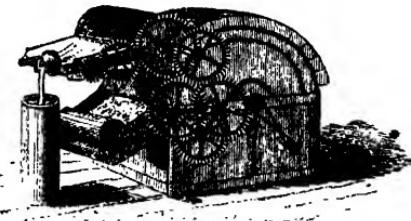
FIRST CARDING ENGINE.

comes off, is drawn through a funnel at a little distance in front of the cylinder, which reduces it to a roll or *sliver*. This after passing between two rollers, and, being compressed into a firm, flat riband, falls into a deep can, where it is coiled up in a continuous length until the can is filled.

The invention of the crank and comb has been given by some to Arkwright; by others to Hargreaves, the inventor of the jenny. Those who defend the claim of the former, say that it was communicated to Hargreaves by one of Arkwright's work-

men, who chalked out a sketch of it upon the table of a public-house.

Thus, by a series of ingenious improvements, the carding-engine was perfected, and it has scarcely been improved since Arkwright's time. It is interesting to watch the cotton at one end in its tangled, knotted state, the fibres lying in every direction, and then to walk to the other end and notice the beautiful filmy web stripped from the doffer by the crank and comb. It is so light and flimsy that it no longer resembles cotton, but rather the delicate lines which the



SECOND CARDING ENGINE.

gossamer spider sometimes draws over the fields in autumn.

In fine spinning, the cotton passes through two carding-engines; the first a coarse, and called a *breaker-card*, and the second, in which the teeth are finer, called a *finishing-card*. A

number of cardings from the breaker-card are united together at the edges by passing them between the steel rollers of a *lap machine*; the new lap thus formed is wound upon a cylinder, and is then ready to feed the finishing-card.

(To be continued.)

### AVARICE.

MONEY, thou bane of bliss, and source of woe,  
Whence comest thou, that thou art so fresh and fine?  
I know thy parentage is base and low:  
Man found thee, poor and dirty, in a mine.

Surely thou didst so little contribute  
To this great kingdom, which thou now hast got;  
That he was fain, when thou wast destitute,  
To dig thee out of thy dark cave and grot.

Then, forcing thee, by fire he made thee bright.  
Nay, thou hast got the face of man; for we  
Have with our stamp and seal transferr'd our right;  
Thou art the man, and man but dross to thee.

Man calleth thee his wealth, who made thee rich;  
And, while he digs out thee, falls in the ditch.

G. HERBERT.

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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ASSYRIA—NINEVEH.



MOUNT ARARAT.

PHYSICAL GEOGRAPHY.

THE elevated table-lands of Iran, the great Highlands of Western Asia, extend in a belt of considerable width, but of much greater length, from the course of the Indus to the shores of the Mediterranean, passing between the Caspian Sea and the Persian Gulf, and between the Black Sea and the Levant. The eastern portion of this region is occupied by Afghanistan, the centre by Persia, the west by Turkey. For the most part its surface is

capable of cultivation; and though large tracts are now resigned to the rugged wildness of nature, in ancient times these supported a numerous, industrious, and energetic population; and the whole region was the seat of mighty nations whose names are famous in history, though in general little else now remains to tell of their past greatness than the ruined remains of cities thickly scattered here and there, piles of massive architecture on which the suns of centuries and millenniums have looked, uninhabited indeed for ages, yet still standing in mute and desolate grandeur.

Between the Caspian and the head of the Persian Gulf this great plateau of Iran, which had averaged a breadth of nearly 500 miles, becomes much narrower, scarcely retaining half that width; but at the same time it assumes a loftier elevation. An Alpine region commences, of ragged, conical, mountain masses, which increase in height as the traveller proceeds to the north-west, until about midway between the southern extremities of the Caspian and the Black Seas, the renowned mountain of Ararat rears its snowy peaks to the skies. This is the loftiest land in Western Asia, the taller of its cones attaining an elevation of more than 17,000 feet. The actual height of the mountain itself is, however, much less than this, for the table-land of Armenia, on which its base rests, is 7,000 feet above the level of the sea. Travellers speak in admiration of the grandeur of this famous peak. Sir Robert Ker Porter, who approached it from the north, paints in glowing colours the magnificence of the spectacle that met his eye when Ararat first burst upon the view, rising from a wide-spread verdant plain, watered by the clear and swift Araxes, and covered with populous villages. He enjoyed the unusual advantage of seeing the glorious mountain quite unveiled by clouds from the base to the summit, and the sparkling snow-white cones shining out in dazzling splendour against the clear blue sky.

From the southern side of this mountain, ridges of lower elevation branch off to the south and south-west, inclosing the romantic and beautiful Lake Van, the ancient Arsissa, and then stretch away towards the south-east in a rugged region of precipitous peaks and deep romantic glens and valleys. This is the region of Koordistan, the home of the wild, savage, and free Koords, whose hand, like that of the sons of Ishmael, whom they much resemble, may be said to be against every man, and every man's hand against them.

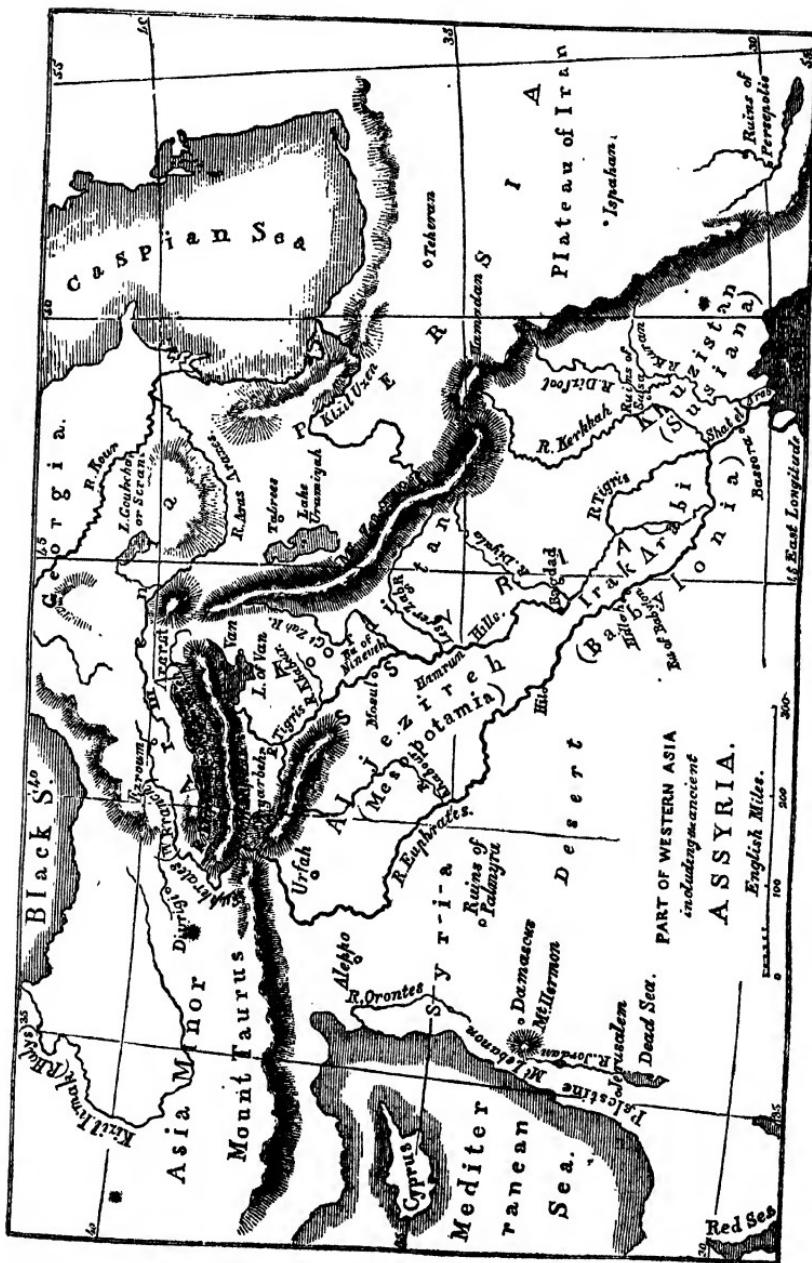
The mountainous region that girds the base of Ararat gives birth to the great river-system of Western Asia, which, like most of the great watersheds of this continent, is double. The Euphrates and the Tigris flow nearly parallel to each other through a basin of 1,850 miles in length, and at its mouth fall by a common channel into the head of the Persian Gulf.

This basin, at its upper part, has a breadth of  $7^{\circ}$  of longitude, from about  $36^{\circ}$  E. to  $43^{\circ}$  E., but narrows towards its lower extremity, where its width is not more than  $1\frac{1}{4}^{\circ}$ , from  $48^{\circ}$  E. to  $49\frac{1}{4}^{\circ}$  E. Into the area so bounded, however, the ridged and knotted mountain mass that incloses Lake Van projects like a great promontory, dividing the sources of the Euphrates, which are on its northern side, from those of the Eastern Tigris, the Khabour, and the Zab, which fall from its southern declivities.

The Euphrates, from its springs near Mount Ararat, flows along to the westward for about 250 miles, vainly seeking an outlet through the mountain chain of Tauras that bounds its southern bank. At length the full river, its constituent branches having united, precipitates itself through a chasm in the chain, but a few miles distant from the source of the Tigris.

## ASSYRIA—NINEVEH.

99



From this point the two sister rivers diverge, both, however, pursuing a general south-easterly course, and again approach, thus enclosing a large tract of level country, now the Turkish province of Algezira, but anciently known as Mesopotamia, a Greek version of its original Semitic name, Naharaim, signifying "The Two Rivers."

On the eastern bank of the Tigris, which separated it from the Mesopotamian plain, was situated, according to ancient geographers, Assyria Proper, bounded on the north by the Niphates mountains (the modern Nebad Tagh), which separated it from Armenia, on the north-east by the Zagros chain (the mountains of Koordistan), which divided it from Media, and on the south-east and south by the provinces of Susiana and Babylonia, the flat alluvial districts which constitute the lower portion of the Euphrates' basin.

The upper part of this region is rugged and mountainous, lying among the ridges and valleys that form the southern declivities of the Niphates mountains, which are in fact the eastern extremity of the great chain of Taurus. A range of hills, dividing the valley of the Tigris from that of the Khabour, descends along the banks of the former river nearly as far as Mosul ; but to the south-west of this point a vast level plain stretches out from the river's banks to the bases of the Koordish mountains, similar in character as in appearance to the plains of Mesopotamia on the opposite bank. Low ranges of hills, of sandstone, limestone, and gypsum, here and there break the uniformity of these plains, which are bounded by the Hamrun hills, not far from the thirty-fourth parallel of north latitude.

Three large tributary rivers fall into the Tigris from the east, within this region, the Khabour, the Greater Zab, and the Lesser Zab. These all have their sources in the lofty snow-clad mountains of northern Koordistan ; the course of the Khabour (called, to distinguish it from a river of the same name that flows into the Euphrates, the *Upper* Khabour), however, has not been traced throughout its length. The Greater Zab, the principal river of Assyria after the Tigris, rises in the elevated plateau between Lakes Van and Urumiyah, at a level of 7,000 feet above the sea. It pursues a winding course of 200 miles, chiefly among the mountains, receives several tributaries, and falls, a stream of 60 feet in width, into the Tigris, in 36° north latitude.

The Lesser Zab has its principal sources about 20 miles south of the extremity of Lake Urumiyah ; it has a course of about 100 miles, and pours into its superior a deep and rapid stream 25 feet broad. The Tigris itself has at this point a width of 1,500 feet.\*

The physical characteristics of the country under consideration, the original home of the renowned Assyrian nation, differ with the varying elevation of surface. Mr. Ainsworth, who has personally examined it with great skill and acumen, divides it into two districts, that of the mountains, and that of the sandy plains ; the low alluvial plains of Susiana and Babylonia are at present excluded from our examination.

The mountainous region around Lake Van, including the sources of the Tigris and the Greater Zab, have a tolerably uniform geological structure. Granite rocks are met with, but the igneous rocks, considered to belong to the later formations, predominate. These mountains are not deficient in metals. At Divrigi, on one of the tributaries of the Upper Euphrates, vast masses of native iron, 3 feet thick, are found. A little lower down on the same river there are silver mines, with the following ores,—argentiferous

\* Or, about half as wide again as the Thames at London Bridge.

galena, a sulphuret of lead, silver, antimony, and iron; a sulphuret of antimony and silver. Near the sources of the Tigris there are copper mines, said to yield 2,250,000 lbs. annually. Silver mines occur again to the eastward of the same range. The lofty Koordish mountains between the great lakes and the Tigris present similar conformations. In the valley of the Greater Zab there are veins of lead, which are worked.

The hilly country merging into uneven plains, between the mountains and the banks of the Tigris, consist almost wholly of chalk, and the overlying deposits, interrupted here and there by igneous rocks. At Ilit are celebrated fountains of naphtha and bitumen in a magnesian limestone. In the neighbourhood of Mosul red sands and sandstones prevail, and extend to the Hamrun hills. The Kufri hills, to the south-west of the lesser Zab, are composed of fresh-water limestones, gypsum, and sandstone, with deposits of bitumen, naphtha, sulphur, and salt. There are burning fountains of naphtha here, and at the pass of the Tigris through the Hamrun hills.

The botany of Mount Taurus is particularly rich, especially in its trees and shrubs, but this is chiefly true of its central and northern districts; the southern parts, with which we have principally to do, are comparatively defective. Pines, oaks, and ashes, are the most abundant forest-trees, and the sides of the mountains are often well wooded with these to their summits. The walnut and the mulberry are also common. The plane attains an enormous size. The declivities that face the south are sheeted with vineyards and orchards; pears, apples, apricots, plums, figs, almonds, and olives yield their fruits in abundance, and of excellent quality. Wheat and barley are cultivated with success. Many of the beautiful flowering plants and bulbs of our gardens have their native country here; the daphne, the myrtle, the oleander, the guelder rose, the tree pink, the clematis, the jasminie, the honeysuckle, and the rhododendron, are enumerated among the wild plants and shrubs; and some of the sheltered valleys are said, in spring, to be as gay as a flower-garden with the brilliant blossoms of bulbous and herbaceous plants.

On the hills and plains there is a great scarcity of timber-trees, and the annual or tender plants are few; "the tough stems of perennials alone seem able to withstand the excessive variations of temperature." Wormwood is characteristic of this region; and plants of the Borage and Cruciferous tribes, abound, with species of milk vetch and mimosa.

"For two months in the year, namely October and November, vegetation is at a stand-still; everything is burnt up, and no new forms appear; but after this period the *Nile* clouds from the Lebanon in Syria, and reverses in the mountain temperatures to the north and east over Mesopotamia and Adiabene, bring down moderate but refreshing rain. The brown and fallow colour of the soil changes; grasses begin to spread and increase; and notwithstanding the subsequent frost and storm, some of the Daisy tribe bud, but do not flower. But the succession of vegetation is kept up by those families which have succulent roots, nodes, or bulbs, which preserve moisture so as to insure life even amidst the most arid soil. Sleeping during the summer heats, they awake to activity with the first rains, and some send forth prematurely their leaves, or even their buds, in October. Among these are a colchicum, a tulip, a crocus, an ixia, and an arum. They are soon, however, enveloped in snow, or blasted by the wintry winds; till early in spring, when the same precocious flowers make their appearance with all that vivid beauty of colour and variety of form which

have lent to the poet and the painter their not always fabulous pictures of the East." \*

In spring, plants of the Lily and Amaryllis families, and their allies, are abundant; in summer, woolly, thorny, prickly, and spinous species prevail; thistles of various genera cover whole districts with their aculeated foliage, and tufted heads of blossom. Aromatic birds of the Labiate family also characterize the plains, as various species of thyme, marjoram, betony, mint, &c. Two species of liquorice are common on cultivated lands.

The kinds of grain and pulse that are fit for the food of man are unusually numerous in these primeval seats of human habitation. Mr. Ainsworth enumerates wheat, barley, guinea-corn (of two kinds), lentils, chick-peas, two kinds of vetches, peas, kidney-beans, and medick. Esculent vegetables include most of the pot-herbs used in Europe, several sorts of cucumbers, gourds, melons, pumpkins, and squashes, the ochro (the edible *Hibiscus*), the egg-plant or love-apple, and the tomato, and a species of mushroom or truffle, which is so abundant as to constitute the principal food of the Bedouins in spring.†

The fields furnish capers, borage, mallows, sour docks, water-cress, wild-mustard, asparagus, Syrian hart-wort, and many other plants useful as salads or condiments. Around Mosul, the gummy roots of a species of Scorzonera afford a plentiful nutriment. The leaves of lettuces, sow-thistles, and thistles are eaten, as are also the bulbs and corms of onions, crocusses, and hyacinths. Tobacco is cultivated, as are also sesame, the castor-oil shrub, hemp, fenugreek cotton, and bastard saffron. The leaves of a gigantic arum are used as paper; henna, with which the Oriental women dye their finger-nails, is obtained from *Lawsonia inermis*; and gum tragacanth from milk vetches, of no fewer than twelve species. The members of the Euphrates Exploring Expedition often used a wild kind of *triplex* as a culinary vegetable: its taste resembled that of spinach, to which it is botanically allied.

Among the fruits of the Assyrian plains are enumerated the olive, the white and black mulberries, the pomegranate, the fig, the cherry, the apricot, several sorts of plums, the peach, the almond, the apple, the pear, the quince, the cornel cherry, the jujube, the walnut, the pistachio, the chestnut, the filbert, and the great seeds of *Pinus cembra*.

#### JOHN MILTON.

**JOHN MILTON** was born in London, on the ninth of December, 1608.‡

His father, who was a scrivener, appears to have been very solicitous about his education, for he received his first instructions from a private tutor, Mr. Young, a man of considerable learning and abilities. He was then sent to St. Paul's School, whence he was removed, in his sixteenth year, to Christ's College, Cambridge, which he entered as a pensioner.

He was, at this time, a good Latin scholar; and, at the age of fifteen, versified two Psalms which he thought worthy of publication, but they did not give evidence of remarkable talent.

\* Ainsworth's *Assyria, Babylonia, and Chaldea*, p. 33.

† Burckhardt, *Addison*, &c.

‡ The following is an extract from the Register of Baptisms of Allhallows Church, Bread Street, London:—"The 20th day of December, 1608, was also baptized John the Sonne of John Mylton, Scrivener."

Many of his elegies were written in his eighteenth year, and he had then read all the best Latin authors, so as to be familiar with their works. He was the first Englishman who, after the revival of polite literature, wrote Latin verses with classical elegance and purity. He took the degrees of Bachelor and Master of Arts, and, on leaving college, returned to the house of his father, who then resided at Horton in Buckinghamshire, where he remained five years. The greater part of this time was passed in reading Greek and Latin, but he found leisure to write the *Masque of Comus* which was acted at Ludlow, by the Earl of Bridgewater's sons and daughter. The idea of the plot of this exceedingly beautiful poem was suggested by an adventure that happened to the three children of this nobleman, who, in passing through Heywood forest, with some of their relatives, were benighted, and the daughter, Lady Alice Egerton, for a short time lost.

His next composition was "Lycidas," an elegy written on the death of the son of Sir John King, Secretary for Ireland. He is supposed about this period to have also written his "Arcades," for while living at Horton he occasionally passed a few days at the house of the Countess of Derby, at Harefield, where the "Arcades" formed part of a dramatic entertainment.

He now began to grow tired of the country, and had some thoughts of taking chambers in one of the Inns of Courts, when losing his mother, he determined to travel; and accordingly, in the year 1638, quitted England for the Continent. After visiting Paris, he went to Italy, and stayed two months at Florence, where his compositions met with great applause. He passed some time both at Rome and Naples. At the latter place, a hermit, with whom he accidentally became acquainted introduced him to Manso, Marquis of Villa, formerly the patron of Tasso. It was Milton's intention to have made the tour of Italy and Greece; but hearing of the dissension existing between Charles the First and the Parliament, he resolved to hasten his return home, because he could not bear to spend his life in amusements abroad, while his countrymen, in England, were contending for what he considered their rights. Some merchants informed him that the Jesuits had laid plots against him, because of his religious opinions: and he had besides offended them by visiting the great astronomer Galileo, then kept a prisoner by the Inquisition for his discoveries in astronomy, or, as it is termed, for philosophical heresy; but he, nevertheless, remained two months longer at Rome and went on to Florence without molestation. Having visited Lucca, Venice, and Geneva, where he became acquainted with John Diodati and Frederic Spanheim, two learned professors of divinity, he passed through France, and returned to his native country, after an absence of a year and three months.

He now engaged lodgings at the house of a tailor, in St. Bride's Church-yard, and undertook the education of his two nephews, John and Edward Phillips. Finding his rooms too small he took a house and garden, in what was then one of the suburbs of London, but which is now in the heart of the city, and known by the name of Aldersgate Street. Here he received more boys to be boarded and instructed.

Dr. Johnson, speaking of this circumstance, says,—

"Let not our veneration for Milton forbid us to look with some degree of merriment on great promises and small performance, on the man who hastens home because his countrymen are contending for liberty, and when he reaches the scene of action, vapours away his patriotism in a private boarding school."

"This," he continues, "is the period of his life from which all his

biographers seem inclined to shrink. They are unwilling that Milton should be degraded to a schoolmaster; but since it cannot be denied that he taught boys, one finds out that he taught for nothing; and another that his motive was only zeal for the propagation of learning and virtue; and all tell what they do not know to be true, only to excuse an act which no wise man will consider as, in itself, disgraceful. His father was alive—his allowance was not ample; and he supplied its deficiencies by an honest and useful employment."

It is related that he performed wonders in the art of education, and a formidable catalogue is given of the Greek and Latin authors read by his pupils, between ten and fifteen years of age.

"But," to use the words of the great moralist before quoted, "those who tell or receive these stories should consider that nobody can be taught faster than he can learn. The speed of the horseman must be limited by the power of the horse. Every man that has ever undertaken to instruct others, can tell what slow advances he has been able to make, and how much patience it requires to recal vagrant attention, to stimulate sluggish indifference, and to rectify absurd misapprehensions!"

In his school, as in everything else which he undertook, Milton laboured with great diligence. In one respect at least he deserves general imitation, namely, the carefulness with which he instructed his scholars in the precepts and duties of religion. He himself set them an example of hard study and extreme temperance, except now and then when he passed a day of festivity with some friends who lived in Gray's Inn.

After a year and a half spent in sedulous attention to the duties of his new profession, Milton began to take a part in the controversies of the times, siding with the Puritans, for the following strange and unsatisfactory reason; that "they were inferior to the prelates in learning."

His father now came to reside with him, and assist in his increasing school. At the age of thirty-four he married the daughter of Mr. Powell, a justice of the peace in Oxfordshire, and brought her to London, anticipating much happiness in her society; but his hermit-like mode of life was uncongenial to her taste, and only a month after her marriage she begged to be allowed to return to her family and friends for the remainder of the summer; which request was granted, upon her promising to come back at Michaelmas.

When that period arrived, the lady showed no inclination to return to her husband. He sent her several letters, but receiving no answer, despatched a messenger, who was sent back with contempt. This conduct made him extremely angry, and he carried his anger so far as to determine on procuring a divorce from her whom he had married without sufficiently studying her character, and, as it is to be feared, without much affection. However, one day when at the house of a relation near St Martin's-le-Grand, he was surprised to see his wife rush into the room where he was sitting, and falling on her knees implore forgiveness.

For some time he was so forgetful of Christian duty as to resist her entreaties; but at last he promised to forget what had passed, and domestic peace was once more established.

He seems, at this period, to have changed sides in politics without any good reason; but whatever business occupied him, poetry was never long out of his thoughts, and in 1645 the "Allegro" and "Penseroso" made their appearance amongst a collection of his Latin and English poems.

His wife's father, brothers, and other relatives, who were royalists, being

now persecuted and in distress, he kindly allowed them all to take refuge in his house, where they remained until the death of Charles I.

After this event, Milton was made Latin Secretary to the Council of State, and became much involved in political disputes; writing and publishing many books against the views and opinions of the royalists, which were much admired and extensively read by that party which had overthrown the Church and murdered the King.

When about forty-four, Milton had the misfortune to lose his sight, which had long been failing. At the time that Cromwell assumed the title of Protector, he had been blind for several years, but such was the vigour of his intellect, that he continued to discharge the duties of his office, and to write on controversial subjects, as he had previously done.

He alludes to his loss of sight in one of the most beautiful passages of his "Paradise Lost":—

"Seasons return, but not to me returns  
Day, or the sweet approach of ev'n or morn,  
Or sight of vernal bloom, or summer's rose ;  
Or flocks, or herds, or human face divine ;  
But cloud instead, and everduring dark  
Surrounds me, from the cheerful ways of men  
Cut off, and, for the book of knowledge fair,  
Presented with an universal blank  
Of Nature's works, to me expung'd and ras'd,  
And wisdom at one entrance quite shut out.  
So much the rather, thou celestial light,  
Shine inward, and the mind through all her powers  
Irradiate, thore plant eyes, all mist from thence  
Purge and disperse, that I may see and tell  
Of things invisible to mortal sight."

His first wife died in the year 1652, leaving him three daughters; and he not long afterwards married the daughter of a Captain Woodcock, of Hackney, of whom nothing is related by his biographers, except that she did not survive her marriage a year.

His agency in State affairs was considered of great importance; and upon one occasion, when a treaty with Sweden was artfully suspended, the reason publicly alleged for the delay was Milton's indisposition; whereupon the Swedish Ambassador, much irritated, said, "that he wondered there should only be one man in England who could write Latin, and that man blind!"

At the age of forty-seven he abandoned politics, and set about performing the three great works which he had planned for his future employment, namely, an epic poem, the history of his native country, and a dictionary of the Latin language.

The last two undertakings were never completed, owing to the difficulties which he encountered in their prosecution, in consequence of his blindness; although the dictionary, which he had commenced before he had the misfortune to lose his sight, continued to occupy his mind and powers almost to the time of his death.

But in writing his "Paradise Lost," so great was his store of knowledge of every description, that his loss of sight was hardly felt as a disadvantage.

On the restoration of Charles II., Milton was of course deprived of his office of Secretary, and was, or at least supposed himself to be, in danger on account of the democratic opinions which he had maintained.

Richardson relates, in his memoirs of this great poet, that he was taken

. prisoner and condemned to death, when Davenant, whom Milton had by his exertions prevented from suffering a similar fate at the time the Republican party were in power, interfered, and was the means of preserving his life.

Another account is given by Cunningham in his "History of Great Britain," who tells us that Milton saved himself by pretending to be dead, and having a public funeral procession. "The King," adds this historian, "applauded his policy in escaping the punishment of death by a seasonable show of dying."

The publication of the Act of Oblivion relieved him from any further apprehension, and on his release from prison he removed to Jewin Street, in the City, and being blind and in want of a companion, married a third time. This does not appear to have been more fortunate than his two former marriages, for the lady, as Philips, one of his grandsons, relates, oppressed his children in his lifetime, and cheated them after his death.

The next year he published a short treatise on grammar, "which," says Dr. Johnson, "has nothing remarkable but that its author, who had been lately defending the supreme powers of his country, and was then writing 'Paradise Lost,' should descend from his elevation to rescue children from the perplexity of grammatical confusion and the trouble of lessons unnecessarily repeated."

About this time a Quaker, named Elwood, volunteered to read Latin to him for the advantage of his conversation. Milton required that Elwood should make himself familiar with the continental mode of pronouncing that language, as he could not bear to hear it read in any other manner. Elwood did as he was requested; and Milton, whose quick ear enabled him instantly to tell, by his companion's voice, whenever he did not understand what he read, would always stop and explain the difficult passage.

His time was now almost always occupied by his poem. When he had composed as many lines as he could well remember, he would employ any friend who might happen to be with him to write them down, so that the manuscript must have presented a curious variety of handwriting. He seems to have been possessed with the idea that he could only compose between the autumnal and vernal equinoxes. Some of his biographers state, that it was the spring and summer in which he wrote; but all seem to agree, that for some months of every year he believed that it was useless to invoke his muse, and during that period never attempted poetry.

When the plague raged in London, Milton went to Chalfont, in Buckinghamshire, where he first showed his friend Elwood a complete copy of the "Paradise Lost." Next year, when the danger of infection had ceased, he returned to his house in London, and having obtained a licence, which was at that time necessary, his poem was published. The manuscript was sold to a bookseller for the sum of five pounds, with a stipulation that he should receive five pounds more when thirteen hundred copies of the work, which first appeared in a small quarto edition, were sold, and also five pounds after the sale of the same number of each of two next editions.

It is a great mistake to imagine that Milton's works, during his lifetime, were unvalued or neglected; on the contrary, the sale of thirteen hundred copies in two years, notwithstanding the small number of readers,—the limited call for books in that day,—the odium incurred by the author from his adherence to the party of the Protector,—and the versification of the poem in a style, new to all, and disagreeable to many, is a striking instance of the triumph of genius.

To prove the paucity of readers, it may be mentioned that the public had

from 1623 to 1661, a period of forty-one years, been satisfied with only two editions of the works of Shakspeare, which, probably, did not, together, amount to a thousand copies.

The "Paradise Lost" continued steadily to advance in the good opinion of the public, although Milton's admirers did not dare to publish their praise until the commencement of the Revolution, when secrecy being no longer necessary, the work openly met with the approbation it so richly merited.

In the meantime he continued his studies; and not content with the assistance of friends, who eagerly caught at the opportunity of being his readers, he compelled his two younger daughters to perform the office, having taught them to read and pronounce the Hebrew, Syriac, Greek, Latin, Italian, Spanish, and French languages; so that they could read to him in whichever he pleased.

To be obliged, for hours, to read books of which they did not understand a single word, must indeed have been wearying and irksome, almost beyond the power of endurance. Yet it was borne by both for a long time, until, at length, the expressions of impatience and dislike of the employment, which they could not repress, caused Milton to dispense with their services; and the two girls, with their elder sister, who had only been excused on account of her bodily weakness and imperfection of speech, were sent to learn almost the only things which it was then deemed necessary or expedient women should be taught—needlework and embroidery.

Three years after the publication of the "Paradise Lost," his "Samson Agonistes," and "Paradise Regained," made their appearance. Milton himself states, that he wrote this last work in consequence of a remark made by his friend Elwood, who observed to him, "You have said a great deal about Paradise *lost*, what have you to say upon Paradise *found*?" Inferior as this poem is to its predecessor, it was Milton's favourite, and he could never bear to hear the preference given to "Paradise Lost."

His love for controversy now revived, and he wrote a tract against Popery.

He continued to write and publish works upon various subjects until within the last year of his life. At the age of sixty-five, he died of an attack of the gout, from which complaint he had long suffered, on the 10th of November, 1674, and was buried in the chancel of St. Giles' Church, Cripplegate. His funeral was very splendid and numerously attended.

Milton was below the middle stature, and in his youth so eminently handsome, that he was called the lady of his college. His hair, which was of a light brown colour, hung in *curls* upon his shoulders, according to the description he has given of Adam. Indeed it is said, that the entire portrait of Adam is drawn from himself, as that of Eve is from one of his wives.

In the earlier years of his life he was in the habit of studying late at night, but afterwards adopted the plan of retiring to rest at nine, and rising at four in summer, and five in winter.

The following account is given of the manner in which he passed the day, after he became blind:—

"When he first rose, he heard a chapter in the Hebrew Bible, and then studied till twelve; then took some exercise for an hour; then dined; then played on the organ, and sang or heard another sing: then studied till six; then entertained his visitors till eight; then supped; and, after a pipe of tobacco and a glass of water, went to bed."

We cannot but suppose that this regularity was often interrupted.

"He that lives in the world," remarks Dr. Johnson, "will sometimes have the succession of his practice broken and confused. Visitors, of whom Milton is represented to have had great numbers, will come and stay unseasonably; business, of which every man has some, must be done when others will do it."

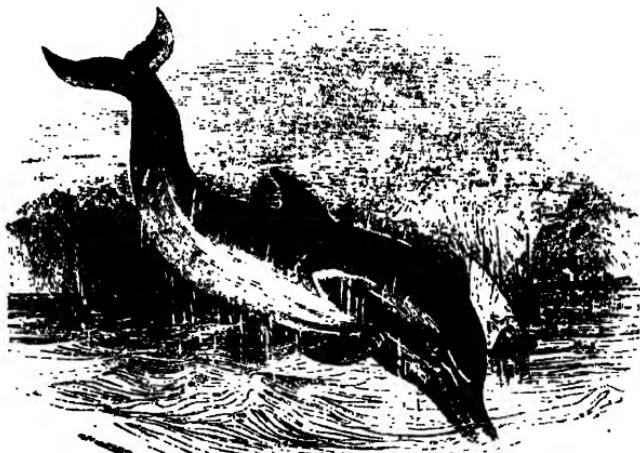
Although his "Paradise Lost" was not commenced until he was considerably advanced in years, yet he seems, all his life, to have contemplated the undertaking some work that should be of use to, or confer honour upon, his country; and in a book published when he was thirty-two, after having promised to do so, he continues, "This is not to be obtained but by devout prayer to that Eternal Spirit, who can enrich with all utterance and knowledge, and sends out His Seraphim, with the hallowed fire of His altar to touch and purify the lips of whom He pleases. To this must be added industrious and select reading, steady observation, and insight into all seemly and generous arts and affairs; till which, in some measure be compassed, I refuse not to sustain this expectation."

Johnson observes of Milton, that he seems to have been well acquainted with his own genius, and to know what it was that nature had bestowed upon him more bountifully than upon others: the power of displaying the vast, illuminating the splendid, enforcing the awful, darkening the gloomy, and aggravating the dreadful.

And Cowper, when speaking of the style of this great poet, remarks with great truth, "that he is never quaint, but everywhere grand and elegant, without resorting to musty antiquity for his beauties. On the contrary, he took a long stride forward—left the language of his own day far behind him—and anticipated the expressions of a century yet to come."

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#### THE DOLPHIN.



THE common Dolphin (*Delphinus delphis*, LINN.) is familiar to fishermen and mariners, being found abundantly around the British shores, and all over the Atlantic and Mediterranean. Its beautiful and graceful form, the extraordinary fleetness with which it darts through the waters, its agile gambols and leaps, and its social habits, render it attractive to

every voyager. They are fond of accompanying a ship, even for many miles. We have often been amused with them. No sooner do we discern a "shoal" or "school" of Dolphins frolicking, perhaps a mile or two distant, than we see them having caught sight of the ship, come trooping down with the velocity of the wind, impelled by curiosity to discover what being of monstrous bulk thus invades their domain. Arrived, they displayed their agility in a thousand graceful motions, now leaping with curved bodies many feet into the air, then darting through a wave with incredible velocity, leaving a slender wake of whitening foam under the water; now the thin dorsal fin only is exposed, cutting the surface like a knife; then the broad and muscular tail is suddenly elevated as the animal plunges perpendicularly down into the depth, or rises beneath the keel to explore the opposite side. So smooth are their bodies, that their gambols are performed with surprisingly little disturbance of the water, and even when descending from their agile somersets, they make scarcely any splashing. It was this playfulness and sociality, doubtless, that made the dolphin so great a favourite with the ancients; the poets abounding with beautiful fables of its docility and love of man.

The dolphin produces but a single young one at a time, which she suckles with care and tenderness. The milk is abundant, and of a creamy richness. Its flesh was formerly considered so great a delicacy as to be frequently served at civic feasts. We have tasted it repeatedly, and found it, though dark, tender and not disagreeable.

#### UNIONS AND COMBINATIONS.

UNIONS are usually managed by a committee, which, in many cases, is invested with absolute power, and can exercise its authority in ordering strikes, without any regard for their fellow-workmen, who suffer by them; and it has more than once done so, contrary to the wishes and inclinations of the men, who are often satisfied with the amount of their wages when the committee is not so. The ceremonies of admission into these unions are of very awful description. Oaths are administered, binding the takers of them to forward to the utmost of their power the objects of the combination; but, what is much worse than this, some unions have imposed the most wicked and atrocious oaths, recognising the principle of compelling people to join the union, and actually sanctioning the assassination of oppressive and tyrannical masters.\*

It is not difficult to understand that a system thus based upon violence should lead to acts of violence; and, accordingly, such has been the result, as the following examples will show:—

In 1829, a Manchester manufacturer, named Ashton, was shot at, and

\* The following is the oath that was taken by the combined spinners in Scotland, in 1823:—

"I, A. B., do voluntarily swear in the awful presence of Almighty God, and before these witnesses, that I will execute with zeal and alacrity, as far as in me lies, every task or injunction which the majority of my brethren shall impose upon me, in furtherance of our common welfare; as the chastisement of knobs, the assassination of oppressive and tyrannical masters, or the demolition of shops that shall be deemed incorrigible; and, also, that I will cheerfully contribute to the support of my brethren who shall lose their work in consequence of their exertions against tyranny, or renounce it in resistance to a reduction of wages," &c.

killed. In 1823, a Scottish union attacked the lives of individuals who refused to join them; there were four instances of deliberate attempts at assassination, and two to burn cotton mills. One man confessed that he had been employed to murder some of the masters, who had incurred the displeasure of the union; and that, for the attempt, he was to receive 100*l.* If he succeeded in murdering his victims, he was to receive more!

In 1833, at Glasgow, a woman named Macshaffery, a cotton-stretcher, while about entering a street leading to her residence, was met by some men, one of whom threw into her face and on her clothes a quantity of vitriol, whereby one of her eyes was entirely destroyed, and her face otherwise severely injured. On the same day, a man named Millar, a foreman in the cotton-spinning trade, was attacked on his way home, and struck with a heavy sharp weapon, which wounded him on the head, and felled him to the ground.

I will conclude this account of the fearful crimes to which these combinations lead, by relating one or two more instances which have occurred so lately as the year 1840.

In the month of October, of that year, a strike occurred amongst the sawyers at Ashton-under-Lyne. Their employers had found it necessary, on account of a depression in the trade, to reduce their wages to the same scale as those of workmen employed in the same labour at Manchester; and, on their announcing the intention, the men refused to continue at their work. Upon this, some of the masters, being deserted by their regular workmen, engaged others in their places. These men judged the demands of their brother workmen to be unreasonable, and the wages offered to be fair, otherwise they would not have engaged themselves; and, surely, in a free country men have a perfect right to work for what wages they choose. The turn-outs, however, determined to prevent the others from exercising this just right. They assembled in crowds before the houses of the employers, and paraded the streets, using intimidating and abusive language to the new workmen. They endeavoured, also, to terrify the men's wives, declaring that they would knock their husband's brains out; and, in one instance, they showed a poor woman a sack, telling her it was to put her husband's body in.

About a fortnight after the strike, as four of the new workmen were returning home, they were waylaid and attacked by a number of ruffians, and one of them, named Garland, was beaten to death.

On the 20th of October, a hole was made in the door of the house of one of the employers, and several pounds of gunpowder were poured into it through a funnel, evidently with the intention of blowing up the house; but the villains were interrupted by the watchman, who gave an alarm; and for this act of duty he was dreadfully beaten by three men with blackened faces.

Some while afterwards a gun, loaded with small shot, was fired at the place where two of the new workmen were usually employed; and had it not chanced that both of them were at the time at the bottom of the pit, the top-sawyer must inevitably have been killed.

It was on the 11th of December that the most dreadful deed was perpetrated. Two workmen, Benjamin and James Cooper, were engaged, soon after dusk, in their occupation in the yard, in the very heart of the town. Benjamin was at the top, and had a candle fixed on his leg, in order that he might see the line marked on the wood. As they were thus employed, a tremendous explosion was heard, which alarmed the whole neighbourhood,

and it was found that a murderous engine, loaded with slugs, had been fired through the crevices of the shed in which the men were employed. Four slugs entered the body of Benjamin Cooper. The poor man being carried by his brother to his lodgings, lingered for two hours in great agony, and then expired, calling on God to provide for his widowed wife and family.

Such, my friends, is the atrocious wickedness to which, in many instances, these diabolical unions have led.

Speaking generally, workmen have a perfect right to bargain with their employers for the wages of labour; though, of course, if workmen demand more than is reasonable, or masters persist in offering less than is reasonable, the unreasonable party is morally wrong. Christians ought to be just and liberal to each other. Even their temporal interests will soon enable them to come to terms, if they act with moderation; but neither party can be justified in using violence or unlawful means to accomplish their object, even if it should be just. In the cases before us, nothing can be more unjust than the whole proceeding. Because a small number of men are dissatisfied with their wages, double, triple, nay, quadruple their number must be deprived of their lawful means of subsistence. The freedom of action of our fellow-creatures is set at nought; and inasmuch as a man does not choose to do that which is manifestly wrong by his employers, and detrimental to his own interests, he is liable to persecution, and even to death, at the wills of a band of misguided men, whose doings must inevitably end by bringing ruin upon themselves.

#### SHORT ACCOUNT OF ENGLISH TRANSLATIONS OF THE BIBLE.

We have accounts of various parts of the Bible being translated into Saxon, when that language was spoken in England.

The Psalms were translated by Adhelm, the first Bishop of Sherborne (A. D. 706). The Four Gospels, by Egbert, Bishop of Lindisfern, who died A. D. 721.

The Venerable Bede also translated various parts, if not the whole of the Bible into Saxon. King Alfred translated the Psalms, and Elfric, Abp. of Canterbury, parts of the Old Testament, about A. D. 995.

English translations of the Bible were also made in the thirteenth and fourteenth centuries. But of the complete English translations of the Bible the first was:—

*Wickliffe's Bible*, about A. D. 1380.. This was before printing was invented; transcripts therefore were obtained with difficulty, and copies were scarce. Before Wickliffe's translation, the price of a Bible in Latin, an unknown tongue to all but the learned, was as much as a labouring man's price of work for fifteen years, and equal to 30*l.* of our money. Even after Wickliffe's own copy was finished, the value of a New Testament was 2*l.* 16*s.* 6*d.*, equal to 30*l.* now. (Gilly's Protestant Forefathers.)

In 1390, the 13th year of Richard II., a bill was brought into the House of Lords for the purpose of suppressing it, but through the influence of John o'Gaunt, Duke of Lancaster, the king's uncle, was rejected. The followers of Wickliffe were then encouraged to publish another and more correct translation of the Bible. But in the year 1408, in a convocation held at Oxford by Archbishop Arundel, it was decreed that no one should thereafter translate any text of Holy Scripture into English by way of a book, or little work, or tract; and that no book of this kind should be read, that was composed lately in the time of John Wickliffe, or since his death.

This constitution led the way to great persecution ; and many persons were punished severely, and even with death, for reading the Scriptures in English.

*Tindal's New Testament* (A. D. 1526). This was the first *printed* edition of any part of the Scriptures into English. He had taken the precaution of printing it on the Continent ; but Tonstall, Bishop of London, and Sir Thomas More, Lord Chancellor, succeeded in buying up and burning almost the whole impression. This enabled Tindal to publish an improved edition. He also translated parts of the Old Testament.

In the year 1531, at the instigation of Henry VIII. and his council, he was imprisoned, and after a long confinement strangled, A. D. 1536, by order of the Emperor, at Villefont, near Brussels, and his body reduced to ashes.

*Miles Coverdale's Bible* (A. D. 1535). Coverdale, afterwards Bishop of Exeter, published a translation of the Bible (the greater part of which was Tindal's), and dedicated it to King Henry the Eighth. This is the first English Bible allowed by royal authority, and a copy of it was by royal proclamation ordered to be placed in the choir of every parish church, to enable every man to read therein.

*Matthews' Bible* (A. D. 1537). John Rogers, who assumed the name of Thomas Matthews, and who had assisted Tindal in his biblical labours, edited a Bible, probably at Hamburgh.

*Taverner's Bible* (A. D. 1539). This was a kind of intermediate work, being a correction of Matthews' Bible.

*The Great Bible* (A. D. 1539). This was a revised edition, corrected by Cranmer and Coverdale, and so called because printed in large folio. There were several editions of it, and particularly one in 1540, for which Cranmer wrote a preface, showing that "Scriptures should be had and read of the lay and vulgar people ;" hence this edition of 1540 is called Cranmer's Bible.

During the reign of Edward VI. (a period of seven years and a half) no new versions were executed, though eleven editions were printed both of the Old and New Testament.

*The Geneva Bible* (A. D. 1560). Coverdale, John Knox, Christopher Goodman, and other English exiles, who had taken refuge in Geneva, published this translation ; the New Testament in 1557, and the remainder of the work in 1560. To it were added notes, favouring the peculiar doctrines of Calvin.

*Abp. Parker's, or the Bishops' Bible* (A. D. 1568). This was so called because he, with other learned persons, eight of whom were Bishops, published this translation. This was in the reign of Queen Elizabeth.

*The Rhemish New Testament* (A. D. 1582). This translation into English was published by the Romanists at Rheims. They retained many Eastern, Greek, and Latin words, and introduced so many difficult expressions, that they contrived to render it unintelligible to the common people. Shortly after,

*The Douay Old Testament* (A. D. 1609-10). Cardinal Allen is understood to have had a principal share in this work. The Rhemish New Testament and Douay Old Testament form the present English Bible of the Romanists.

*King James's Bible.* This is the English translation of the Bible now in common use. It was begun in the spring of 1607, in the reign of King James I., and finished about three years. Fifty-four of the most learned

men in the universities and other places were commissioned to undertake the work of translation ; but seven of these having, from illness and other causes, relinquished their task, the work was performed by forty-seven. The translators were ranged under six divisions, and several portions of the Bible were assigned to them, according to the several places where they were to meet, confer, and consult together. The name which stands at the head of the list of translators is that of Dr. Lancelot Andrews, first Fellow, and afterwards Master of Pembroke College, Cambridge. He was at that time Dean of Westminster, and became Bishop successively of Ely and Winchester. After long expectation and great desire of the nation, the translation of the Bible came forth in the year 1611, the divines employed having taken the greatest pains in conducting the work ; for they had not only examined the original, but also compared together all the existing translations, both ancient and modern.

As the free circulation of the Scriptures in the language of any country has ever been one of the most important instruments in implanting true religion where it did not previously exist, and in awakening a revival of it where it has become decayed, our privileges in this respect ought to awaken in us a solemn sense of our responsibility to make that book a lamp to our feet, and light to our path, which the providence and grace of God have rendered so accessible.

#### SPENSER'S DESCRIPTION OF A GROVE.

##### 1

Enforced to seek some covert nigh at hand,  
 A shady grove not far away they spied,  
 That promised aid the tempest to withstand ;  
 Whose lofty trees, yclad with summer's pride,  
 Did spread so broad, that heaven's light did hide,  
 Not pierceable with power of any star ;  
 And all within were paths and alleys wide,  
 With footing worn, and leading inward far :  
 Fair harbour, that them seems ; so in they entered are.

##### 2

And forth they pass, with pleasure forward led,  
 Joying to hear the birds' sweet harmony,  
 Which therein shrouded from the tempest dread  
 Seem'd in their song to scorn the cruel sky.  
 Much can they praise, the trees so straight and high ;  
 The sailing Pine, the Cedar proud and tall,  
 The vine-prop Elm, the Poplar never dry,  
 The builder Oak, sole king of forests all ;  
 The Aspen good for staves, the Cypress funeral.

##### 3

The Laurel, meed of mighty conquerors,  
 And poets sage, the Fir that weepeth still,  
 The Willow, worn of forlorn paramours ;  
 The Yew, obedient to the bender's will,  
 The Birch for shafts, the Sallow for the mill,  
 The Myrrh, sweet bleeding in the bitter wound,  
 The warlike Beech, the Ash for nothing ill,  
 The fruitful Olive, and the Plaintain round,  
 The carver Holme, the Maple seldom inward sound.

## WILD FLOWERS.

COMMON BROOM. (*Cytisus Scoparius.*)

As the wood has flowers peculiar to it, and the meadow and the corn-field have each their own blossoms, so there are some plants which flourish especially on heaths and commons. Far away, over many a heath-land, we may see the bright golden blossoms of the "bonnie broom;" and if, on some sunny day in July, we stray among them, we may see the large dark brown Broom-pods opening to let out their ripe seeds. The blossoms seem to invite the butterflies to linger about them, and the bees keep a perpetual humming near them. The Broom is useful also to man. Sometimes when roads are cut down it is planted on the sides of the banks that its roots may hold the crumbling earth together. The bark is steeped in water that its fibres may be used instead of flax, and the small twigs and branches are serviceable in tanning leather. The young boughs are made into brooms, and the young green buds are pickled in vinegar, and eaten as capers. When the shrub attains a good size its wood is hard, and is valuable to the cabinet-maker for veneering. The plant varies much in height, according to the soil and situation on which it grows. When it is found on exposed heaths it is usually a low shrub; but when it springs up on some sunny hill-side, or is sheltered by a neighbouring rock or thicket, it is sometimes ten or twelve feet high. It is always an ornamental plant, for when its

flowers have passed away, its dark green leaves and twigs remain. Wordsworth well describes it:—

“Am I not  
In truth a favour'd plant?  
On me such bountiful summer showers,  
That I am cover'd o'er with flowers;  
And when the frost is in the sky,  
My branches are so fresh and gay,  
That you might look on me, and say—  
‘This plant can never die.’”

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

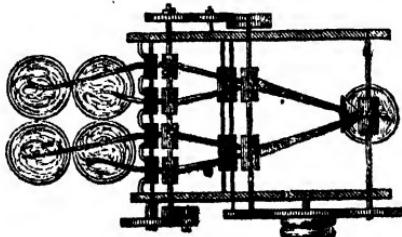
### COTTON MANUFACTURE—*continued.*

#### DOUBLING AND DRAWING.

The fibres of the cotton are not yet sufficiently level to be twisted into yarn; and it often happens that the teeth of the card lay hold of a fibre by the middle, and thus double it together, in which state it is unfit for spinning. The cardings are therefore doubled and drawn out by a machine called the *drawing frame*, the principle of which depends upon different pairs of rollers revolving with different degrees of rapidity, as already noticed. If, however, the riband, as it leaves the carding-engine, were simply extended in length by drawing it out, it would be liable to tear across, or to be of a different thickness at different parts of its length. To prevent the tearing, and to equalize the thickness, a number of cardings are joined together, and drawn out to a length equal to the sum of the lengths of all the separate cardings.

The effect produced is the same as taking a piece of cotton-wool between the finger and thumb, and drawing it out many times, laying the drawn filaments over each other, before each drawing. If the cotton be then examined, it will be found that all the fibres are parallel, and of equal length. This effect is accomplished very perfectly in the drawing-frame, which consists of a number of rollers, arranged in what are called *heads*, each head consisting of three pairs of rollers, of which the second pair moves with greater speed than the first, and the third moves quicker than the second. Drawing rollers are used in several machines which have yet to be noticed; their arrangement and mode of action may therefore be further explained.

The accompanying figure represents the arrangement of one drawing head. The under rollers are made of iron and



fluted; the upper ones, also of iron, are smooth, and covered first with flannel and then with leather. This enables the rollers to take firm hold of the cotton. The top rollers are sometimes called *pressers*, because they press, by means of weights, upon the under ones.

These weights are hung to a curved hook, or to a saddle, which includes two or more rollers. A mahogany bar, faced with flannel, rests, by its own weight, upon the top rollers, and strips off all the loose, hanging fibres. Similar bars are also made to press up against

the under fluted rollers. The distance between the first and second pairs of rollers is never allowed to exceed the length of the cotton filaments, for if such were the case, the riband might be torn apart by the second pair pulling it while the first held it fast. The riband is stretched most in passing from the second to the third pair, the distance between which must not be too great, for the reason just stated, nor too small, or the staple will be torn.

The cardings are sometimes presented to the drawing-frame in the form of laps, or more usually they are taken up from separate cans, and guided over a tin or brass plate containing a number of separate channels. They all meet and unite together just before passing between the first pair of rollers, which reduces them all into one sliver; the second pair extends every inch of its compound sliver into about two inches, and the third pair of rollers extends these two inches into ten: so that, suppose ten slivers from ten sepa-

passed on to a second drawing-head, and the ten drawings, as they are now called, are again doubled, and drawn out into one. Twelve of these are then doubled, and drawn out at a third head; twelve of these are doubled again, and again drawn out at a fourth head; and, lastly, six of these are doubled, and drawn out at a fifth head.

Thus it will be seen, that, by collecting all these numbers together, the doubling of the fibres of the cardings have been multiplied no less than 86,400 times; for  $10 \times 10 \times 12 \times 12 \times 6 = 86,400$ . The drawing is carried to this extent only in fine spinning. For coarse numbers, the doubling and drawing are not repeated so often. Six card-ends are usually passed through the first drawing-head, and formed into one riband. Six of these ribands are again formed into one; six of these again make a third sliver, and five of these pass through the last drawing-head. Thus we have  $6 \times 6 \times 6 \times 5$ , or 1,080 of the original card-ends united in the finished drawn sliver.

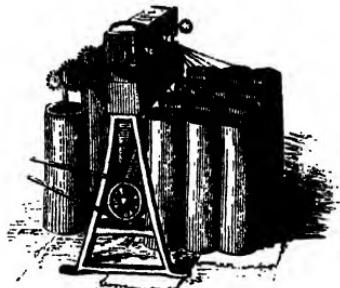
This doubling and drawing process is of the greatest importance, the quality of the yarn depending upon its being well done. Arkwright is the inventor of it; and it is related of him, that, when any defects appeared in his yarns, he told his people to look to their drawings, for, if they were right, everything else would be so too.

The drawing-frames require constant watching, to see that none of the cans are emptied before full ones are ready to supply their place.\* The labour is performed by young women, who are kept pretty actively at work. A contrivance has been introduced which greatly abridges the labour. A cylindrical plunger is made to fall at intervals into the receiving-can, and by pressing down the sliver, enables the can to hold a much greater quantity than it would do if the sliver were left to fall loosely into the can. Further improvements have lately been made, by which the sliver is regularly and beautifully coiled in the

DRAWING. (12 INTO 1.)

rate cans enter the frame on one side, the result is, that, after passing through the rollers, a single sliver is produced of the same thickness as one of the ten slivers, but of ten times the length; the ten slivers are, in fact, united into one, and this being passed between two smooth cast-iron rollers, to condense it, is allowed to fall into a can on the opposite side of the frame.

By repeating this process again and again, it will be easily seen that the chances of uniformity in the sliver are greatly multiplied; for the defects of individual slivers are absorbed and got rid of. When ten of the cans are filled with the compound sliver, they are



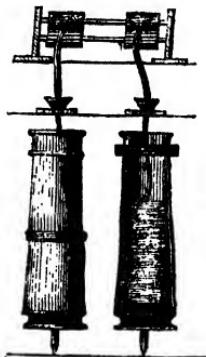
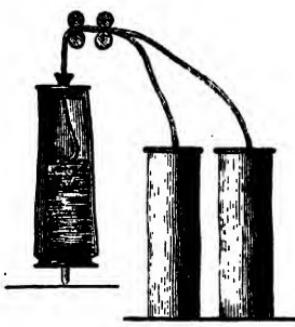
\* By a recent invention, in case of the breaking of any sliver, or the emptying of a can, so as to lessen the number of the slivers, the machine is made to stop instantly; thus requiring much less attention, and insuring a greater uniformity in the thread.

can, and compressed at the same time but without at all stretching the slive

#### ROVING.

By the process of doubling and drawing, the cotton is formed into a loose porous cord, the fibres of which are arranged side by side. This cord is still much too thick for yarn, but it

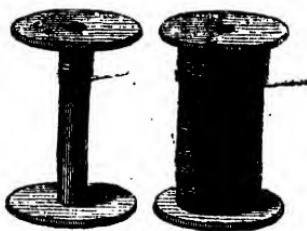
cannot be reduced in size by drawing merely, for if this were attempted it would break; a slight twist is therefore given, which, by condensing the fibres, allows the drawing to proceed. This is the commencement of the spinning process (which is, in fact, little more than a combination of drawing and twisting), and is called *roving*. Up to



a recent period, the roving-machine, as introduced by Arkwright, was in use, but it is now superseded by better and more complicated mechanism. The roving-machine of Arkwright did not differ greatly from the drawing-frame. It consisted of two pairs of drawing-rollers, for extending the slivers, of which two were generally doubled and united. The sliver, as it quitted the drawing-rollers, was received into a can, which was made to spin rapidly round, and this, by giving a slight twist to the sliver, formed the roving, and distributed it in a coil within the can. Thus far all was well, but it was necessary for the next process that the roving should be wound upon bobbins; the can, when full, was therefore carried to a simple machine, and wound by hand, by which it was scarcely possible to avoid injuring the delicate cord, and hence the quality of the yarn suffered. This led to the introduction of the *Jack frame*, or *Jack-in-the-box*, as it was more familiarly called, and afterwards to the *bobbin-and-fly frame*, which may now be considered as the established roving-machine of the cotton manufacture.

The bobbin-and-fly frame is an exceedingly complicated machine, al-

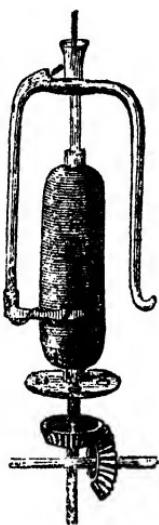
though the objects to be accomplished by it are sufficiently simple; namely, to give the roving a slight twist, and then to wind it on the bobbin. The



BOBBINS.

first is easily done by the revolutions of the spindle; the second is more difficult. It is scarcely necessary to explain, that the bobbins now under notice differ in no way from the reels in common use, except in being of very large size. The spindle, which holds the bobbin, is a round steel rod, driven by a small cog-wheel, fastened on the lower part of the spindle, as shown in the next figure. The bobbin is slid upon the spindle, and the small bed, or platform, on which it rests, is made to revolve by another series of small wheels, not shown in the figure. The spindle has two arms, called the

*fly* or *flycer*. This fly is fixed on the top of the spindle in such a way, that it can be taken off in an instant, for the purpose of putting on or taking off the bobbin. One arm of the fly is



hollow, the other solid, and this serves to balance the machinery. One machine contains from thirty to a hundred and twenty spindles, which, for economy of space, are placed in two rows, each spindle in the back row standing opposite the space left between two spindles of the front row.

The action of the machine is this: The sliver having been drawn by the rollers, is twisted, by the rapid revolutions of the spindle, into a soft cord or roving: this enters a hole in the top of the spindle, and passes down the hollow arm of the fly; it is then twisted round a steel finger, which winds it on the bobbin with a certain pressure. This spring finger is a beautiful contrivance by Mr. Houldsworth. Before this invention, the rapid motions of the fly caused the roving to become improperly stretched by the centrifugal force, but this is now prevented by twisting the roving round the finger: by its pressing the soft roving on the bobbin, each bobbin is made to hold a much larger quantity. All this seems to be sufficiently simple; but the difficulties begin to appear when it is considered, that the delivering finger

must move up and down, so as to wind the roving evenly over the bobbin, and that, as the bobbin increases in thickness, a difference in speed is necessary to prevent the roving from being improperly stretched or broken. The first object is attained by making the bobbin slide up and down on the spindle, and the second by causing the strap which drives the bobbin to act on a conical instead of a cylindrical drum; thus giving to the movement a varying instead of an equal degree of speed.

It will be seen, that the spindle and bobbin are driven by different movements. This is necessary, because, if they both moved at the same rate, the roving would be twisted merely, and not wound upon the bobbin; but, by making the bobbin revolve a little quicker than the spindle, the winding is accomplished. For example, if the bobbin revolves fifty times, while the spindle only revolves forty, forty turns of the bobbin will have nothing to do with winding; but there are ten turns of the bobbin above those of the fly, which will perform the winding. Hence, the forty turns of the spindle produce twist, while the fifty turns of the bobbin produce ten coils of the roving upon its barrel.

In fine spinning, two rovings are doubled and passed a second time through the frame, where they receive a further degree of drawing and twist.

The bobbin-and-fly frame is superintended by a female, whose duty it is to join the broken slivers, to remove the full bobbins, and to place empty ones in their stead.

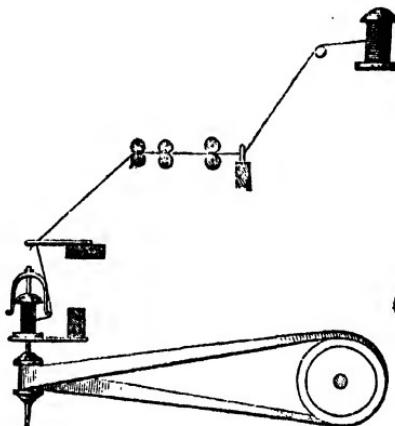
In fine spinning, the rovings are sometimes prepared at what is called the stretching-frame, which is a kind of mule-jenny, to be noticed presently; but usually the rovings are finished at one of two machines, namely, the throstle and the mule-jenny. It may be stated, as a general rule, that the throstle spins warp, and the mule weft; there are, however, many exceptions to this.

#### THROSTLE SPINNING.

It has been already noticed, that Arkwright's water-frame was partially superseded by the mule-jenny, but that, as it was capable of producing

a strong wiry thread, well-adapted for warps, it was introduced in an improved form, under the name of the *throstle*. This machine is usually made double, a row of bobbins, spindles, &c., occupying each side of the frame. The bobbins, filled with rovings from the bobbin-and-fly frame, are mounted at the upper part of the frame in two ranges. The roving from each bobbin passes through three pairs of draw-

ing rollers, where it is stretched out to the requisite fineness. On quitting the last pair of rollers, each thread is guided by a little ring, or a notch of smooth glass let into the frame, towards the spindles, which revolve with great rapidity, producing, by the motion of their flyers through the air, a low musical hum, which is supposed to have given the name of *throstle* to this machine. The roving,



which may now be called *yarn*, passing through an cyclot formed at the end of one of the arms of the flyer, proceeds at once to the bobbin.

The yarn is wound upon the bobbin by a curious contrivance. The bobbin fits very loosely upon the spindle, and rests on its end upon a kind of platform. The bobbin is not connected with the spindle except by the thread of yarn which has to be wound; therefore, as soon as the flyer is set spinning, the thread drags the bobbin after it, and makes it follow the motion of the spindle and fly: but the weight of the bobbin, and its friction on the platform, which is promoted by covering the end with coarse cloth, causes it to hang back; and thus the double purpose is served of keeping the thread stretched and winding it on the bobbin much more slowly than the flyer revolves. The yarn is equally distributed on the bobbin by a slow up-and-down motion of the platform.

These effects are the same as were produced by the bobbin-and-fly frame,

but in the throstle they are attained by simpler means. In the former machine, a distinct movement caused the bobbin to revolve quicker than the spindle. In the throstle, the bobbin is made to revolve by the pull of the yarn, which is now sufficiently strong for the purpose; but the roving in the bobbin-and-fly frame would not bear the strain.

A throstle-frame generally contains from 70 to 150 spindles on each side. The drawing-rollers extend the whole length of the frame. The top rollers are, as usual, covered with leather, and the thread passes over a guide bar, which has a slight horizontal movement, for the purpose of leading the thread over different points of the rollers, and thus preventing the leather from being chafed by constant pressure on one spot. One young woman and an assistant attend to from 140 to 300 spindles in two double frames; their duties are to mend broken threads, and shift the bobbins as required.

(To be continued.)

## REV. WILLIAM TYNDALE.

MARTYR, 1536.

Few men more essentially promoted the cause of the Reformation in England than did Tyndale, by publishing his translation of the New Testament from the original Greek into English. With Miles Coverdale he commenced translating the Pentateuch, and subsequently the book of the prophet Jonas, which, with the New Testament, previously translated by him and others, formed the whole of his labours on the Scriptures ; for which good work he was strangled, and his body burned.

Towards the close of his life he retired to Antwerp, where he reserved or hallowed to himself two days of the week, which he named his days of pastime, and those were Monday and Saturday. On the Monday he visited all such poor men and women as were fled out of England ; and those he did very liberally comfort and relieve, and in like manner provided for the sick and diseased persons. On the Saturday he walked round about the town, seeking out every corner and hole where he suspected any poor person to dwell ; and where he found any who were overburdened with children, or were aged or weak, those also he plentifully relieved. And thus every week he spent his two days of pastime as he called them.

The dreadful spirit of the times would not leave Tyndale unmolested at Antwerp, where ~~the~~ Phillips was employed to betray him to the emperor's procurator, by whom Tyndale was taken to the castle of Filford, eighteen miles from Antwerp. He refused to employ any advocate, saying, that he would answer for himself ; and so he did : although he deserved no death, he was condemned, and put to death.

He had himself written about the blessedness of Faith as a preparation for death. Let us use the following as a precept : " Above all things, take unto you the shield of faith, wherewith ye may be able to quench all the fiery darts of the wicked, that ye may be able to resist in the evil day of temptation, and especially at the hour of death."

## LONDON.

FEW people know that in every seven minutes of the day and night a child is born in London, and that in every nine minutes one of its inhabitants dies ! The population of London, is, roundly, 2,362,000. If the averages of the past fifty years continue, in thirty-one years from this time as many persons as now compose its population will have died in it, and yet in about thirty-nine years from this time, if the present rate of progress continue, the metropolis will contain twice as many persons as it does now. The whole population of Liverpool in 1851 numbered 255,000 ; while the increase of inhabitants in London between 1841 and 1851 was 413,000. It is truly marvellous ! Where it will stop, and how food and shelter are provided for these masses, are subjects of speculation.

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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ASSYRIA—NINEVEH.



THE TIGRIS NEAR NINEVEH.

ZOOLOGY.

THE zoology of Assyria is rich and extensive; but though its more prominent features have long been familiar to science, its more minute but not less interesting developments have not yet been thoroughly explored, especially in the mountains, the natural history of which is still almost unknown in detail.

Bats are numerous, as they are in all warm countries: the species are small, and the forms not very different from those common in Europe. A

hedgehog and a small shrew represent the *Insectivora*. The greater cats inhabit this region; the majestic lion, that emblem of the Assyrian monarchy, stalks over the midnight plains; the leopard is spread over the mountain region of Taurus, though it seems to be not abundant; and even the tiger, now rarely seen to the west of the Indus, yet lingers in these lofty fastnesses. Hyrcania, the region lying to the south of the Caspian Sea, was anciently famous for this formidable but beautiful animal, and we have modern evidence that it inhabits Mount Ararat. Tournefort states that the sides of this mountain, even almost up to the line of perpetual snow, are infested by tigers, and declares that he saw them within 700 yards of him.\* According to the same authority, the young ones are caught in traps by the people around the base of the mountain, to be exhibited in shows of wild beasts through Persia. A hunting leopard, which seems to differ from the common maned species, is not uncommon in the lower part of the plains. It climbs trees with facility, notwithstanding the imperfect retractility of the claws. Three species of lynx are common, the Spanish lynx, the chaus, and the caracal. The last named is said to be trained for the chase, like the hunting leopard, and is believed to be the species indicated under the term "lynx" by the ancients. It chiefly inhabits woody districts.

The wolf is common in the mountains, but in the plains is replaced by an allied species, the Tartarian wolf. The jackal is abundant, and so is the fox. Like the wolf it is the European species that is met with in Taurus, but on the rivers a distinct species takes its place. The striped hyæna is common in all parts, creeping stealthily around the mounds and ruins that are so numerous; and prowling by night around the village burying-grounds for its obscene meal. Several species of bears, both black and brown, are ascribed to the Armenian and Koordish mountains. In the towns great numbers of dogs are seen, as through all Western Asia, of the breed commonly called the Bazaar-dog; they are protected and fed, sometimes at the public expense, in spite of the Moslem prejudice which counts the touch of a dog a defilement. The Turkoman watch-dog, "a large, rugged, fierce race, equalling the wolf in stature, shaped like the Irish greyhound, and with equally powerful jaws,"—with erect ears, bushy tail, and rufous hair,—is the common attendant of the herdsmen.

Many species of the weasel family, as the ratel, the sable, and the genet, the ichneumon, the polecat, and the marten, occur in greater or less abundance, chiefly in the higher districts; and an otter inhabits the large rivers.

The order Rodentia is, more than any other, characteristic of these regions, though the species are not yet properly identified. They include rats and mice, dormice, marmots of several genera, which, with squirrels, tenant the elevated forests, while the plains teem with those leaping rats, called jerboas and gerbills, of many kinds, which in their figure, proportions, and motions resemble the kangaroos of Australia. The mole-rat, a curious animal, almost shapeless, and totally blind, burrows abundantly in the plains of Koordistan. Two kinds of hare and a rabbit also are found here; the beaver inhabits the larger rivers, and the porcupine is common in waste and ruined places. This is probably the animal rendered "bittern" in our version, which, it was predicted, should possess ruined Nineveh, as well as Babylon and Bozrah. (Zeph. ii. 14; Isa. xiv. 23; xxxiv. 11.)

\* Morier mentions among the wild animals of Ararat, bears, small tigers lynxes, and lions.

Wild boars are abundant, especially in the valleys, and in the vicinity of cultivation, often doing great damage, not only by devouring, but by rooting up and trampling under foot, the crops. A wild horse, mule-like in form, of a yellowish-bay hue, scours the plains, as does also the wild ass; both are so fleet as to be with difficulty taken. Mr. Morier thus describes the appearance of the latter:—"On the desert . . . in the grey of the morning, we gave chase to two wild asses, which had so much the speed of our horses, that when they had got at some distance, they stood still and looked behind at us, snorting with their noses in the air, as if in contempt of our endeavours to catch them. The Persians sometimes succeed in killing them, but not without great dexterity and knowledge of their haunts. To effect this, they place relays of horsemen and dogs upon the track which they are known to pursue, and then hunt them toward the relays, when the fresh dogs and horses are started upon the half-exhausted animal."

There are two breeds of both the horse and the ass in a state of domestication; of the former, the elegant and swift Arab, and the stouter Turkoman; of the latter, the common Oriental ass, larger and nobler than ours, and the long-bodied Damascus breed. The northern camel with two humps, and the Arabian camel with one, are both bred.

Several varieties of the Bovine races are common to the country, including, besides the ordinary breeds of kine, the humped species, and the buffalo. The great-tailed Tartarian sheep and the Bedouin sheep represent the tame breeds of these useful animals, and there is a wild sheep in the mountains.



THE BAZAAR DOG.

Three beautiful sorts of goat exist, including the fine-woollen Angora goat; and the impregnable rocky heights of Koordistan and Taurus are the home of at least three species of Ibex which are so often represented in the Assyrian sculptures, and whose enormous knotted horns, the trophies of the chase, are used to adorn the houses of the hardy mountaineers in these districts.

All the kinds of deer which we know in this country occur in the northern parts of Assyria, the stag, the fallow-deer, and the roebuck; the two former are represented in the bas-reliefs. The gazelle, the emblem of female elegance and beauty, ranges the plains, and another antelope replaces it in the mountains.



IBEX.

In ornithology the resemblance to European forms is so great, especially in the northern districts, that the naturalist would scarcely believe, but for a few unfamiliar types, that he was not among the feathered songsters of his own country; the majority, even of the species, being absolutely the same. Thus the osprey, kite, kestrel and gentle falcon; the griffon and Egyptian vulture; the passerine, barn and eagle owls; the raven, carrion-crow, hooded-crow, jackdaw, magpie, and oriole; the song-thrush, blackbird, ring-ouzel, missel-thrush, and water-ouzel; the warblers, fire-crest wrens, chats, wagtails, larks, tits, buntings, sparrows, and finches; the cuckoo, the woodpecker, the wryneck, and the hoopoe; the bee-eater; the nightjar; the Barbary dove and the turtle; the wood pigeon, and the domestic pigeon; the red-legged Barbary, and common partridges; the quail; the pheasant (wild in its native region); the great bustard; the plovers, sandpipers and snipes, herons and rails; the ducks and grebes; are all common European, and almost all British, birds, and these constitute nearly the whole ornithology recorded as characterizing this region.

It has, however, some peculiarities. The ostrich, formerly abundant on the arid deserts of Mesopotamia and Assyria, has not quite disappeared; at least if we may credit the testimony of Herbert, who says that he saw ostriches in the plains between Lar and Schiraz. Mr. Ainsworth also implies that it still exists, though rare. Its occurrence in the mythological bas-reliefs of Nineveh proves that it was familiar to the ancient Assyrians. A starling of much brilliancy of plumage, a blue-headed bee-eater, three species of kingfisher, and several of the doves, are peculiar. The *Pterocles arenarius*, and the *Syrrhaptes paradoxus*, birds allied to the partridges,

but presenting curious anomalies of structure, occur in the plains, the former in flocks of associated millions. There is a distinct kind of pheasant in the forests, and some of the bustards are peculiar. The beautiful Sultana of North Africa is common on the broad rivers, as is the large white pelican.

Reptiles, according to Mr. Ainsworth, are numerous. Two species of land-tortoise occur on the plains, one of which resembles *Testudo Graeca*: two kinds of marsh-tortoise are found in the Euphrates, and are probably common to the Tigris also. Among ruins three species of gecko have been noticed, and the common chameleon is found in sheltered woods. In the open country the lizard and iguana families prevail, with many forms of the serpent races. Wherever rock, clay, or sand has the slightest tendency to vegetation, there insects prosper, and lizards make their appearance. The fundamental forms assumed in the plains are large bodies and big heads, with a skin lubricated and defended from the sun by a natural exudation. The narrow, smooth, and long forms of lizards do not prosper on sterile and arid spots. Agamas of the same species, reappear at intervals over large tracts of country, and they furnish on these plains nourishment to various mammalia and birds. It appears also that the numerous large non-venomous serpents which frequent these plains are fed by these insectivorous lizards. Vipers and snakes confine themselves more to the small *Rodentia*.\*

The immense numbers of small lizards found in these and the surrounding regions have been noticed by many travellers. Major Skinner, speaking of the desert of Syria, observes:—"The ground is teeming with lizards; the sun seems to draw them from the earth; for sometimes, when I have fixed my eye upon one spot, I have fancied that the sands were getting into life, so many of these creatures at once crept from their holes." Bruce is still more explicit:—"I am positive that I can say without exaggeration, that the number I saw one day, in the great court of the Temple of the Sun at Baalbee, amounted to many thousands: the ground, the walls, the stones of the ruined buildings, were covered with them; and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping and basking."

Little seems recorded concerning the fishes of Assyria; though doubtless the rivers and mountain streams are well supplied. Most of those which have been recognised belong to the great carp tribe, or to some of its sub-genera. The barbel, the chub, and the loach are mentioned; the bimby or scaly carp, a fine fish much esteemed, is abundant, as it is throughout Western Asia. The celebrated black-fish is stated by Mr Ainsworth to be of the Silure family, which is also represented by other species in these waters. Trout are common in the mountain streams.

Insects are numerous, but still require investigation. Among the beetles, of which two hundred species were collected by Dr. Helfer after the rains, many genera, supposed to be peculiar to the northern and temperate parts of Europe, occur. Such are the brachelytrous beetles, seven hundred species of which belong to Britain, and of which our common black rove-beetle, or cock-tail, is a familiar example; of these, forty species were met with. *Carabus Hemprishei* is one of the most common insects of the plains. In spring the Heteromerous division of beetles is characteristic of the region, especially the Melastomata, of which our common churchyard beetle is an example. Weevils and lady-birds are in considerable abundance: the chafers are rather scarce, with the exception of the little genus *Aphodius*

\* Ainsworth's Assyria, &c., p. 45.

(small dung-chafers common in our pastures in spring), which occurs at certain seasons in swarming flights like locusts. Locusts and grasshoppers of many kinds are abundant during the dry months. Many fine butterflies are peculiar to this region, and some are shared in common with Europe; others are Indian types. Dragon-flies and other laced-winged flies are numerous along the borders of the rivers. Bees, wasps, ants, flies, and gnats, are also common; and parasitic insects swarm in the filthy huts of the inhabitants to a degree hardly imaginable by an untravelled European.

The climate, as might be supposed from the nature of the country, its elevation, and its distance from the sea, is marked by great extremes of heat and cold, and by absence of moisture. In the mountains there is a great accumulation of snow during the winter, which remains long after vegetation has commenced in spring. The influence of warm days and cold frosty nights in spring is to form vegetation, and yet preserve the snow. In crossing the Marash hills (near the head of the Tigris), in February, Mr. Ainsworth found the snow from two to three feet deep, and so hard as to bear a horse; yet in occasional bare spots, crocuses were in flower, and spiders were running about. At the same time, in sheltered valleys, Daphnes, Euphorbias, and bright and various coloured anemones, were in full bloom. The summer heat is often excessive in these valleys, from the radiation and reflection of the sun's rays.

In the plains also there are considerable variations of temperature. "From the Mediterranean to the Tigris there is an increase of cold in the same parallels, from west to east... This is not the case, however, in the plains east of the Tigris, which, sheltered by the Koordish mountains, have a more temperate winter. The influence of Taurus, clad for so many months with snow, is considerable in reducing the winter temperature; and on the plains of North Syria and of Mesopotamia, from the want of protecting hills, causes the vegetation to be in reality less southern than that of Sicily and Andalusia. At the same time, the long extent of littoral mountains, Ananus, Casius, and Lebanon, add to these unfavourable circumstances by impeding the passage of mild air from the Mediterranean. Notwithstanding these circumstances, the direct heat of the sun, increased by radiation and equality of level, is almost without a moderating influence, for evaporation is nearly null, and hence, where the winter temperature is so low, the summer heats are intense."\* The traveller whom we are citing states that, in the month of August, the thermometer was observed as high as 115° (Fahr.) in the shade, and in winter as low as 12°, which gives an annual range of temperature of more than 100°.

- To these excessive variations of temperature, and to the proximity of lofty snow-covered ranges of mountains, it is probably owing that this region is subject to sudden tempests which rage with terrific violence. The Exploring Expedition was caught unawares in one of these tornados, and before a place of shelter could be gained, one of the steamers was overwhelmed and sunk, with the greater part of her brave crew. The atmosphere, during its brief but terrible continuance, was so darkened, that though the vessel was within a short distance of the river's bank, several persons who could swim are believed to have been drowned, from not knowing in what direction to make for the shore.

We shall conclude our observations on the physical characteristics of this region by a vivid picture of the Assyrian plains at two seasons of the year, sketched by the accomplished Mr. Layard.

\* Ainsworth's *Assyria, &c.*, p. 31.

"The middle of March in Mesopotamia is the brightest epoch of spring. A new change had come over the face of the plain of Nimroud. Its pasture lands, known as the 'Jaif,' are renowned for their rich and luxuriant herbage. In times of quiet the studs of the Pasha, and of the Turkish authorities, with the horses of the cavalry and of the inhabitants of Mosul, are sent here to graze. Day by day they arrived in long lines. The Shemutti and Jeshesh left their huts, and encamped on the greensward which surrounded the villages. The plain, as far as the eye could reach, was studded with the white pavilions of the Hytas, and the black tents of the Arabs. Picketed around them were innumerable horses in gay trappings, struggling to release themselves from the bonds which restrained them from ranging over the green pastures.

"Flowers of every hue enamelled the meadows; not thinly scattered over the grass as in northern climes, but in such thick and gathering clusters that the whole plain seemed a patchwork of many colours. The dogs, as they returned from hunting, issued from the long grass dyed red, yellow, or blue, according to the flowers through which they had last forced their way."

Some six weeks have elapsed, and the traveller thus records the change of circumstances. "The heats of summer had now commenced, and it was no longer possible to live under a white tent. The huts were equally uninhabitable, and still swarmed with vermin. In this dilemma I ordered a recess to be cut into the bank of the river, where it rose perpendicularly from the water's edge. By screening the front with reeds and boughs of trees, and covering the whole with similar materials, a small room was formed. I was much troubled, however, with scorpions and other reptiles, which issued from the earth forming the walls of my apartment; and later in the summer, by the gnats and sand-flies which hovered in a calm night over the river. . . . The change to summer had been as rapid as that which ushered in the spring. The verdure of the plain had perished almost in a day. Hot winds, coming from the desert, had burned up and carried away the shrubs; flights of locusts, darkening the air, had destroyed the few patches of cultivation, and had completed the havoc commenced by the heat of the sun. The Abou-Salman Arabs, having struck their black tents, were now living in sheds, constructed of reeds and grass along the banks of the river. The Shemutti and Jeshesh had returned to their villages; and the plain presented the same naked and desolate aspect that it had worn in the month of November. The heat, however, was now almost intolerable. Violent whirlwinds occasionally swept over the face of the country. They could be seen, as they advanced from the desert, carrying along with them clouds of sand and dust. Almost utter darkness prevailed during their passage, which lasted generally about an hour, and nothing could resist their fury. On returning home one afternoon, after a tempest of this kind, I found no traces of my dwellings; they had been completely carried away. Ponderous wooden frameworks had been borne over the bank, and hurled some hundred yards distant; the tents had disappeared, and my furniture was scattered over the plain. When on the mound, my only secure place of refuge was beneath the fallen lias, where I could defy the fury of the whirlwind: the Arabs ceased from their work and crouched in the trenches, almost suffocated, and blinded by the dense cloud of fine dust and sand, which nothing could exclude."\*

\* Nineveh and its Remains. i. 77, 123.

EVIL EFFECTS OF COMBINATIONS—*continued.*

THE examples of injurious effects arising from combinations among workmen have been taken principally from the cotton trade.

It will be well to notice their evil effects in some other trades.

One of the most extensive unions in the kingdom is that formed by the workmen in the building trade. In the year 1833, that body commenced operations in Manchester, Liverpool, and other towns. They dictated to their employers in every possible way; they objected to contracts being taken by them; they interfered with their engaging apprentices; they threatened to strike if any of the workmen were discharged for whatever cause, having, however, nothing to complain of on the score of wages, which had never been less than 24*s.* weekly for the last twenty years, and often a great deal more. The masters found that these demands placed such serious impediments in the way of their business, that they determined to employ no men except such as should sign a declaration that they did not belong to the trades' union. The men refused to comply, and a general turn-out ensued. For six months they persisted in the strike, when, finding the masters were still firm, the combination was forsaken by all, and they returned to their employers, requesting work on the old terms. But they had paid dear for their folly. During the best part of the year, when their labour was most in request, and their wages the highest, they had remained idle, living on the scanty allowance doled out to them from the union funds. They had hoped that their masters would have been willing and eager to employ them when the strike was at an end; but, in consequence of their refusal to work when there was work in abundance for all, many of the buildings were discontinued, and the places of some of the men were supplied by fresh labourers brought from distant parts, and also by machinery, so that the application for employment could not be granted, and thus the misery of pauperism awaited them; but, what was worse than all, their long cessation from work had produced habits of idleness, and with idleness its never-failing companion, immorality, ensued, and unmitigated evil was the result of the whole.

We now come to the subject of combinations and unions amongst colliers and miners. At this time (1847) combinations exist in some of the coal districts, by which the workmen bind themselves not to work more than a certain quantity of coal, their object being to keep up the price of coal by never having too large a stock on hand. Observe, now, the mischief which has been done to trade in general by such combinations as these amongst colliers, not to work more than a certain quantity of coal.

It happened that two leading iron-masters in Glasgow received a large order for pig-iron from Germany, on condition that it should be delivered for from 60*s.* to 65*s.* a ton. This price would have afforded a fair profit to the iron-master, and a fair rate of wages to the collier and ironstone miner, enabling them to earn from 3*s.* 6*d.* to 4*s.* a day by ten hours of reasonable labour; but, by their combination, the miners had so raised the price of the raw material, out of which the pig-iron is made, that the iron-master was obliged to charge 70*s.* or 75*s.* a ton for the iron which he ought to have been able to produce for 60*s.* to 65*s.* Now, see the consequence of this: out of one hundred furnaces in Lanarkshire fifteen were not in work at all, and others not fully employed, on account of the

high price of coal. The iron required, not having been obtained in Scotland, was made elsewhere, some in Germany itself, and some in America. Thus the trade and advantage were lost to Lanarkshire in consequence of the combination of the colliers and miners there.

Again, coal-masters are obliged, in consequence of colliers restricting their labour, to keep one-third more men in their employ, to sink one-third more pits with engines, railways, horses, &c. In addition to this increased charge, they are obliged to pay a higher price per ton for coal and ironstone on account of the diminished quantity of both being produced; and all this operates most injuriously in their competition with foreign trade and other producers both at home and abroad, where combinations do not exist. In many of the manufacturing towns of Staffordshire, in consequence of the high price of coal, trade is suffering in a very serious degree.

The principal trade of Wolverhampton, and other towns, consists in the making of hinges, bolts, nails, locks, screws, &c., the main part of the cost of which is that of the iron and the coal for working it up. Coals were in 1847 12s. a ton, whereas, a few years before, they were 6s. 6d.; bar iron was 10*l.*; in 1842, it was 5*l.* 5*s.* These high prices have driven a great deal of this trade to Prussia and Belgium; and screws, which used to be made almost exclusively in Staffordshire and at Birmingham, are actually imported into Birmingham from Hamburg and Belgium. Manufacturers are often forced to stop for want of coal; and the combination of the colliers to keep up the price of coal makes it impossible for the masters to reduce their prices sufficiently to enable them to meet foreign competition. It is very sad that colliers and miners should be so blind to their own interest, and to that of the community, as thus to labour hard to destroy the very foundation of our national advantage as a manufacturing people, namely, the cheapness of iron and coal; thus encouraging foreign competition, instead of successfully combating it, and do as much as in them lies to destroy and extinguish the very trade which is their mainstay for future employment.

Fluctuation in the rate of wages of the working classes seems to be an evil which does not admit of a remedy on the part of masters, because it arises from causes over which they have no control. The great extent to which the commerce of this country has reached, and to which we owe that many thousands of persons are earning their bread in comfort and respectability, is attributable to the connexion of Great Britain with foreign countries, upon whose markets we are mainly dependent. It is out of our power to effect a regularity of demand amongst foreign nations for the commodities which we manufacture; and regularity of demand is the only thing that could insure a regularity of employment, and of wages. Alternate prosperity and depression must always be an essential feature in a widely-extended commerce.

It is impossible to foresee accurately what will be the amount of the demand for our productions on the part of foreign countries; it must therefore often happen that we have produced more than there is a demand for, and then the market is overstocked; the demand ceases for a time, and with it production must cease for a time, and labourers will be thrown out of employment, or have their wages reduced.

Providence has not, however, decreed that these fluctuations should fall exclusively upon the manufacturing classes of this country. We find that He has ordained that similar fluctuations take place in the natural

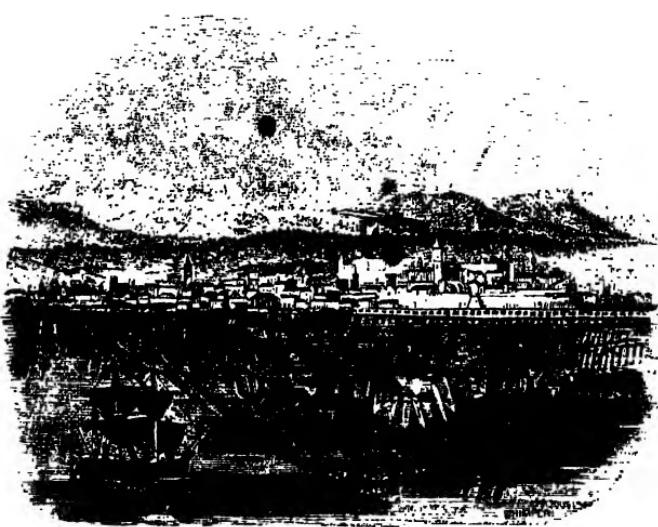
supplies of many other countries. The northern tribes, for instance, in the frozen regions, are subject to alternate abundance and scarcity of food.

The Indians, who live under the tropics, are during certain months deluged with rain, and during others parched with drought. We, who live in the temperate regions, owe to the mercy and goodness of God, that the vicissitudes of abundance and scarcity in the fruits of the earth are less inconveniently felt than in some other countries; but even here harvests vary, and with them varies the price of food. Since, therefore, it is impossible to prevent fluctuation, what we have to do is to provide against it. The northern tribes, above mentioned, during the time of their abundance, lay up what stores they are able, to meet their necessities in the day of scarcity. The Indians, in the rainy season, make large tanks to catch the water, and keep it against the time of drought: so in this country must we do. In the season of prosperity we must lay up against the day of adversity. Earnings, usually high whilst the demand is great, should not be squandered in folly or extravagance, in the gin-shop or the public-house; but a portion of them should be laid by for future exigencies.

That religion, of which our Lord and Saviour Jesus Christ came down to set us an example, teaches us to be self-denying, temperate, and thankful in prosperity, patient and peaceable in adversity, frugal and provident at all times: so shall we never fail.

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#### FATA MORGANA.



In the Straits of Messina, between Sicily and the coast of Italy, a remarkable phenomenon sometimes occurs, which, from the fairy-like effect produced, is called the *Fata Morgana*, or the *Fairy Morgana*.

When the rays of the rising sun form an angle of  $45^{\circ}$  on the sea of Reggio, and when the bright surface of the water is not disturbed either by the wind or the current, a spectator placed on any high building in the city, with his back to the sun and his face to the sea, observes upon the surface

of the water superb palaces, with their balconies and windows, lofty towers, herds and flocks grazing in wooded valleys and fertile plains, armies of men on horseback and on foot, with multiplied fragments of buildings, such as columns, pilasters, and arches. These objects pass rapidly in succession along the surface of the sea during the brief period of their appearance. They are, of course, pictures of palaces and buildings actually existing on the shore, and the living objects can only be seen when they happen to form part of the general landscape.

If, at the time of these appearances, the air is loaded with vapour, or dense exhalations, the same objects which are depicted upon the sea will be seen also in the air, from near the surface of the sea to the height of about twenty-five feet. These images, however, are not so distinct as those seen in the sea. If the air be slightly hazy, as when dew is falling, the objects will be seen only on the surface of the sea, but they all appear fringed with red, yellow, and blue light, as if they were seen through a prism.

When this phenomenon, which does not often occur, is to be seen, the people of Reggio hail it with exultation and joy, running down to the seaside, clapping their hands, and exclaiming, "Morgana! Morgana! Fata Morgana!"

Similar phenomena are not unknown in our own country. The following instance, which lately occurred in the neighbourhood of the Land's End, in Cornwall, has been thus stated to the writer by the gentleman who witnessed it. "There appeared out at sea, and where there was no land, an island, with roads leading from the shore, hills, houses, a church, and smoke, apparently coming from the chimneys of some cottages. The astonished guide at first pronounced the island to be one of the Scilly Islands, till he remembered that those islands lay in a different direction. The vision, however, gradually faded away; it was probably the picture of the shore on which the spectators were standing."

There is considerable difficulty in accounting for these appearances. The images formed in the air are produced by the unequal refraction or bending of the rays of light: and it has been supposed that the pictures seen in the sea may be the aerial images reflected from its surface, or from a stratum of dense vapour; or that they may be the direct reflections from the objects themselves.

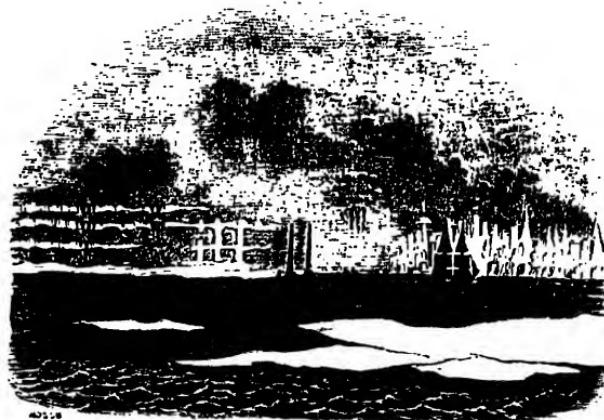
In the arctic regions, the presence of fields and other collections of floating ice is often discovered at a great distance, by a singular appearance in the horizon, called *ice-blink*. It is a band of lucid whiteness, occasioned by the glare of light reflected obliquely from the surface of the ice against the opposite atmosphere. This shining streak, which looks always brightest in clear weather, points out to the experienced navigator, twenty or thirty miles beyond the limit of direct vision, not only the extent and figure, but also the quality of the ice. The blink from ice appears of a pure white, while that occasioned by wide plains of snow has a yellowish tinge.

The ice-blink is very useful to seamen, for it often exhibits dark spots or patches, corresponding to certain openings of water, the existence of which could not otherwise be known; and when beset by ice he endeavours to make his way in their direction. The ice-blink often produces an effect called *looming*, whereby objects near the horizon appear distorted and repeated, and often lifted up into the air. On one occasion, Mr. Scoresby\* having approached so near the unexplored shore of Greenland that the land appeared distinct and bold, was anxious to make a drawing of

\* Now Dr. Scoresby.

it; but, on attempting to do so, he found the outline to be constantly changing. On examining the coast through a telescope, its appearance was that "of an extensive ancient city, abounding with the ruins of castles, obelisks, churches, and monuments, with other large and conspicuous buildings. Some of the hills seemed to be surmounted by turrets, battlements, spires, and pinnacles; while others, subjected to one or two reflections, exhibited large masses of rock, apparently suspended in the air, at a considerable elevation above the actual termination of the mountains to which they referred. The whole exhibition was a grand phantasmagoria. Scarcely was any portion sketched, before it changed its appearance, and assumed the form of an object totally different. It was, perhaps, alternately a castle, a cathedral, or an obelisk; then expanding horizontally, and coalescing with the adjoining hills, united the intermediate valleys, though some miles in width, by a bridge of a single arch, of the most magnificent appearance and extent. Notwithstanding these repeated changes, the various figures represented in the drawing had all the distinctness of reality; and not only the different strata, but also the veins of the rocks, with the wreaths of snow occupying ravines and fissures, formed sharp and distinct lines, and exhibited every appearance of the most perfect solidity."

On another occasion, on the same coast, Dr. Scoresby saw an inverted image of a ship in the air, and on looking at it through his telescope, he could distinguish every sail, the general rig of the ship, and its particular character: "insomuch, that I confidently pronounced it to be my father's ship, the Fame, which it afterwards proved to be; though on comparing notes with my father, I found that our relative position at the time gave a distance from one another of very nearly thirty miles, being about seventeen miles beyond the horizon, and some leagues beyond the limit of direct vision. I was so struck with the peculiarity of the circumstance, that I mentioned it to the officer of the watch, stating my full conviction, that the Fame was then cruising in the neighbouring inlet."



LOOMING OF THE ICE.

In some cases, these aerial reflections are repeated two, three, and even four times; the form of a ship, for example, appearing in the air; then, above this, the same object inverted; then the third occurs in its right position, and the fourth is inverted.

## THE BLUE AND YELLOW MACAW.



PARROTS are monogamous—that is, a single male attaches himself to a single female ; the eggs are deposited in the holes of decayed trees, or in the centre of the monstrous nests, so common in the tropics, formed by *Termites*, the crisp, earthy walls of which are easily chiselled away by the strong beaks of these birds. They associate in numerous flocks, whose flights from tree to tree present the most brilliant appearance, as the rays of a tropical sun glance from their gorgeous backs and wings. Their voices are loud and harsh : and of most of the species the screams have a piercing and grating character almost intolerable. Yet these are capable of wonderful modulation ; the power which is possessed by many species of imitating the words of human language, the notes of vocal music, the calls of animals, and almost any sounds articulate or inarticulate, is well known ; especially as developed by their extreme docility and memory, in the education of a state of captivity. This faculty is possessed by the various genera, however, in very different degrees.

Extraordinary examples of the imitative talent in these birds are on record, combined in some instances, at least, with what looks so like intelligence as to cause surprise and admiration. We quote the following interesting account from the “Gleanings” of Mr. Jesse, the more readily as that accurate observer seems, from his introductory remark, in some degree to authenticate the marvellous statement

After speaking of the renowned Parrot belonging to Colonel O'Kelly, Mr. Jesse proceeds thus :—" There is another Parrot, which is occasionally brought from Brighton to Hampton Court, that appears to equal it in intelligence and power of imitation. I had seen and heard so much of this bird, that I requested the sister of its owner to furnish me with some particulars respecting it. The following is her lively and brilliant account of it :—

" As you wished me to write down whatever I could collect about my sister's wonderful Parrot, I proceed to do so, only premising that I will tell you nothing but what I can vouch for having myself heard. Her laugh is quite extraordinary, and it is impossible to help joining in it oneself, more especially when in the midst of it she cries out, " Don't make me laugh so. I shall die, I shall die ;" and then continues laughing more violently than before. Her crying and sobbing are curious ; and if you say, " Poor Poll ! what is the matter ?" she says, " So bad ! so bad ! got such a cold !" and after crying for some time will gradually cease, and making a noise like drawing a long breath, say, " Better now !" and begin to laugh.

" The first time I ever heard her speak, was one day when I was talking to the maid at the bottom of the stairs, and heard what I then considered to be a child call out " Payne ! (the maid's name) I am not well, I'm not well !" and on my saying, " What is the matter with that child ?" she replied, " It's only the Parrot ; she always does so when I leave her alone, to make me come back ;" and so it proved ; for on her going into the room the Parrot stopped, and then began laughing quite in a jeering way.

" It is singular enough, that whenever she is affronted in any way, she begins to cry, and when pleased, to laugh. If any one happens to cough or sneeze, she says, " What a bad cold !" Oneday, when the children were playing with her, the maid came into the room, and on their repeating to her several things which the Parrot had said, Poll looked up, and said quite plainly, " No, I didn't." Sometimes when she is inclined to be mischievous, the maid threatens to beat her, and she says " No, you won't." She calls the cat very plainly, saying, " Puss ! puss !" and then answers *mew* : but the most amusing part is, that whenever I want to make her call it, and to that purpose say, " Puss ! puss !" myself, she always answers *mew*, till I begin mewing, and then she begins calling puss as quick as possible. She imitates every kind of noise, and barks so naturally, that I have known her to set all the dogs on the parade at Hampton Court barking ; and the consternation I have seen her cause in a party of cocks and hens, by her crowing and clucking, has been the most ludicrous thing possible. She sings just like a child, and I have more than once thought it was a human being ; and it was ridiculous to hear her make what one should call a false note, and then say, " Oh, la !" and burst out laughing at herself, beginning again quite in another key. She is very fond of singing " Buy a broom," which she says quite plainly ; but in the same spirit as in calling the cat, if we say, with a view to make her repeat it, " Buy a broom," she always says, " Buy a brush," and then laughs, as a child might do when mischievous. She often performs a kind of exercise, which I do not know how to describe, except by saying that it is like the lance exercise. She puts her claw behind her, first on one side and then on the other, then in front, and round over her head, and whilst doing so, keeps saying, " Come on ! come on !" and, when finished, says, " Bravo ! beautiful !" and draws herself up. Before I was as well acquainted with her as I am now, she would stare in my face for some time, and then say, " How d'y'e do, ma'am ?"

this she invariably does to strangers. One day I went into the room where she was, and said, to try her, "Poll, where is Payne gone?" and, to my astonishment, and almost dismay, she said, "Down stairs." I cannot, at this moment, recollect anything more that I can vouch for myself, and I do not choose to trust to what I am told; but from what I have myself seen and heard, she has almost made me a believer in transmigration."\*

## WILD FLOWERS.

WILD HYACINTH. (*Hyacinthus non-scriptus.*)

EVERY child who has wandered in the woods in the sweet months of April and May knows the Blue-Bell, or wild Hyacinth. Scarcely a copse can be found throughout our land which is not then blue with its flowers, for it is to the woodland and the green lane, in Spring, what the buttercup is to the meadow. Growing near it we often find the beautiful pinkish-white blossoms of the wood-anemone, and before it fades away the hedges are getting white, and becoming fragrant with wreaths of the blooming May,

\* Gleanings, p. 218.

but the primroses have almost all departed, and the violets are daily more rare. The root of the Wild Hyacinth is round, and full of a poisonous, clammy juice ; indeed every part of the plant gives out more or less of this juice if we bruise it. Though the root is unfit for food, and is useless to us now, yet in former times it was much prized. In days when very stiff ruffs were worn, the juice was made into starch, and employed to stiffen linen. It served the bookbinder, too, as glue, to fasten the covers of books. The flower has a slight scent, but the chief charms of the Blue-Bell are its beauty and its early appearance. It is but lately that we have looked upon bare trees, and ground strewed with withered leaves, and when no songs of joy were heard ; and now the early flowers seem to say, in the language of Scripture, "The Winter is past ; the rain is over and gone ; the flowers appear on the earth ; the time for the singing of birds is come ; and the voice of the turtle is heard in the land." Our Wild Hyacinth is sometimes found with white or flesh-coloured flowers, but the beautiful garden Hyacinths, with double blossoms, are brought from different countries of the East.

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#### THE PAPER KITE.

ONCE on a time a paper kite  
Was mounted to a wondrous height,  
Where, giddy with its elevation,  
It thus expressed self-admiration :—  
" See how yon crowds of gazing people  
Admire my flight above the steeple ;  
How would they wonder if they knew  
All that a kite like me can do !  
Were I but free I'd take a flight,  
And pierce the clouds beyond their sight ;  
But now, like some poor prisoner bound,  
My string confines me near the ground.  
I'd brave the eagle's towering wing,  
Might I but fly without a string."  
It tugg'd and pulled, while thus it spoke,  
To break the string. At last it broke :  
Depriv'd at once of all its stay,  
In vain it tried to soar away.  
Unable its own weight to bear,  
It flutter'd downward through the air ;  
Unable its own course to guide,  
The wind soon plung'd it in the tide.  
Ah ! foolish kite, thou hadst no wing,  
How couldst thou fly without a string  
My heart replied, O Lord, I see  
How much the kite resembles me :  
Forgetful that by Thee I stand,  
Impatient of Thy ruling hand,  
How oft I've wish'd to break the lines  
Thy wisdom for my lot assigns !  
How oft indulg'd a vain desire,  
For something more and something higher !  
And, but for love and grace Divine,  
A fall thus dreadful had been mine.

JOHN NEWTON.

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

COTTON MANUFACTURE—*continued.*

## MULE SPINNING.

THE throstle is not often employed for very fine spinning, because fine yarn would not bear the drag of the bobbin; but in mule spinning the yarn is wound at once upon the spindles without any strain. In the mule the rolling is first drawn by the usual system of rollers, and then stretched by a moveable carriage, as in the spinning-jenny of Hargreaves. The effect of first drawing and then stretching, is to make the yarn finer and more uniform, as will be explained presently. The spinning-mule is the most interesting and impressive spectacle in a large cotton mill; on account of its vast extent, the great quantity of work performed by it, and the wonderful complication and ingenuity of its parts.

The spinning-mule consists of two principal portions; the first, which is fixed, contains the bobbins of rovings and the drawing-rollers; the second is a sort of carriage, moving upon an iron railroad, and capable of being drawn out to a distance of about five feet from the fixed frame. This carriage carries the spindles, the number of which is half that of the bobbins of rovings. Motion is given to the spindles by means of vertical drums, round which are passed slender cords, communicating with the spindles. There is one drum to every twenty-four spindles.

The carriage being run up to the point from which it starts in spinning, the spindles are near to the roller-beam: the rollers now begin to turn, and to give out yarn, which is immediately twisted by the revolution of the spindles; the carriage then moves away from the roller-beam, somewhat quicker than the threads are delivered, so that they receive a certain amount of stretching, a circumstance which gives value to this machine. The beneficial effect is produced in this way: when the thread leaves the rollers it is thicker in some parts than in others, and those thicker parts not being so much twisted as the thinner ones, are softer, and yield to the

stretching power of the mule, so that the twist is equalized throughout, and the yarn becomes more uniform. When the carriage has completed a stretch, or is drawn out from about 54 to 64 inches from the roller-beam, the drawing-rollers cease to give out yarn, but the spindles continue to whirl until the threads are properly twisted. In spinning the finer yarns, the carriage sometimes makes what is called a *second stretch*, during which the spindles are made to revolve much more rapidly than before. The drawing, stretching, and twisting of a length of thread being thus completed, the mule disengages itself from the parts of the machinery by which it has hitherto been driven, and the spinner then pushes the carriage with his knee, back to the roller-beam, turning at the same time with his right hand a fly wheel, which gives motion to the spindles. At the same time a *copping* wire, as it is called, is pressed upon the threads by the spinner's left hand, and they are thus made to traverse the whole length of the spindle, upon which they are then wound or *built* in a conical form which is called a *cop*. These cops are used for placing in the shuttle in weaving, and form the weft, or short cross threads, of the cloth.

One man is able to attend to two mules, guiding in the carriage of one mule by hand, while the carriage of the other is being moved out by the steam-engine. Much skill is required in pushing back the carriage. As a preparatory step, the spinner causes the spindles to revolve backwards for a moment, to slacken the threads just completed, and throw them off the points of the spindles previous to winding them. In pushing the carriage back he must attend to three things:—he must guide the copping wire so as to ensure the regular winding of the yarn on the cop; he must regulate the motions of the spindles; and he must push the carriage at such a rate as to supply the exact amount of yarn that the spindles can take up in a given time.

The spinner is assisted by boys or

girls to piece the broken threads. He also employs a *scavenger* to collect all the loose or waste cotton, called *fly*, which lies on the floor, or hangs about the machinery. This is chiefly used in cleaning the machinery. It is calculated that the waste of material from the different machines in spinning cotton, amounts to  $1\frac{1}{2}$  oz. per lb., or nearly one-tenth of the original weight. It is the duty of the piecer to join the broken ends of the threads as the carriage moves from the upright frame. The breaking of the threads depends, in some degree, on the temperature and the state of the atmosphere. During an east wind the threads sometimes break faster than the piecers can join them; and it seems probable that the rapid whirling of so many thousand pieces of machinery produces, in very dry weather, a large amount of electricity, which may prevent the proper spinning of the fibres. At such times it is not uncommon to keep the atmosphere of the room moist, by jets of steam, and to maintain a temperature of from  $68^{\circ}$  to  $76^{\circ}$ . Indeed, fine yarn cannot well be spun at a lower temperature.

The quality of the yarn in mule-spinning depends upon the care and attention of the spinner, and it was long thought impossible to substitute mechanical contrivances for the work performed by him. This has led the spinners, on many occasions, to league together, for the purpose of compelling their masters to grant such wages as they chose to demand, and to accept

such an amount of labour as they chose to give. Such acts as these, which are in direct violation of the Divine command, "Servants, be obedient to your masters," are sure, sooner or later, to meet with punishment; and such has been the case in the present instance. The mill-owners, feeling that no dependence was to be placed on their spinners, long desired to supersede them by mechanical contrivance; and this at length, after numerous failures, has been done in a complete manner by the invention of the *self-acting mule*, or the *iron man*, as it is sometimes called in Lancashire. Mr. Roberts of the celebrated firm of Sharp and Roberts, machine-makers, succeeded in perfecting this extraordinary machine, which not only does the work of the spinning-mule without the assistance or attendance of any one except the little piecer, but does it in a more perfect and complete manner; and produces a larger quantity of yarn. The cops, also, are firmer, and of better shape, and contain a much larger quantity of yarn than cops of equal size, wound by hand, so that they are less liable to injury; and in weaving, the superior firmness of the cop allows the loom to be worked at greater speed, whereby cloth of superior quality is produced in greater quantity.

#### REELING.

THE yarn is now disposed of in various ways, according to the use for which



REELING.

it is intended : but it is often found convenient to make it up into hanks.

The machine for winding the yarn from the bobbins, or cops, into regular hanks, is a long eight-sided frame, mounted on a carriage, which is also furnished with spindles or skewers, for holding the bobbins, or cops. These frames are managed by young women, whose duty it is to turn the reel until a check is struck. They then know that the reel has made eighty turns; and, as the sides of the reel measure one yard and a half, a *ley* or *rap* is thus formed, containing 120 yards. Seven of these raps make one hank, containing 560 threads of a yard-and-a-half each; thus making 840 yards to the hank. The size of the yarn is ascertained by weighing the hanks in a kind of balance called a quadrant.\* Each size is put up separately in cubical bundles of five or ten pounds weight. These packages are closely compressed by a simple but ingenious machine called the *bundling-press*, where they are firmly tied while under pressure, and, being wrapped neatly in paper, are ready for the market. The usual average number of hanks to the pound is, for coarse spinning, from ten to forty, but, for some purposes, such as candle-wicks, coarse counterpanes, &c., as low as two hanks to the pound are made. It is often exported as low as from four to six hanks. The highest number usually obtained in fine spinning is 300, but the writer saw at Mr. Houldsworth's mill, at Manchester, yarn of which 160 hanks were required to make a pound. This yarn is a beautiful, hard, cylindrical cord, of wonderful fineness, and has been sold for *twenty guineas*, or upwards, a pound, an astonishing example of the effect of well-directed industry, in increasing the value of raw material. A pound of the best Sea-Island cotton is worth, at the highest price, 5s. per pound ; when manufactured into yarn of the number 460, the value of this pound

of cotton is 420s., or in other words its value is increased 84 times. This yarn was produced by Mr. Houldsworth for a muslin dress for Her present Majesty, in order to show the capabilities of the British manufacture, far excelling anything produced by the Hindoo spinner. It is scarcely necessary to say, that such yarn is not commonly made, but that, if a demand for it were to arise, it could be supplied at a gradually decreasing price.

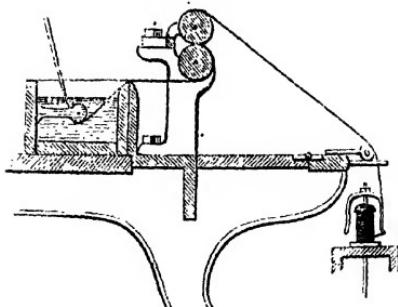
#### THE MANUFACTURE OF SEWING THREAD.

WHEN the yarn is completed, it is usually sent to the *doubling and twisting mill*, for the purpose of being converted into what is now properly called thread. Although we are accustomed to apply the word *thread* to a thin, narrow line of any fibrous material, the manufacturer limits the term to that compound cord produced by doubling or twisting two or more single lines. The single line he calls *yarn*: two or more single yarns laid parallel, and twisted together, he calls *thread*; and of this there are many varieties, such as *bobbin-net-lace thread*, *stocking thread*, *sewing thread*, &c.

The writer visited a sewing-thread factory at Manchester, which, though inferior in extent and importance to the cotton mills, where the raw material is converted into yarn, presents, nevertheless, several points of interest.

The yarn, which is received at the factory in the form of cops, is wound upon large bobbins, ready for the *doubling-mill*, or *thread-frame*, as it is sometimes called. This machine is not unlike the throste of the cotton-spinner, already described ; but its action will be better understood by reference to the following cut. The cops are mounted loosely upon, spindle or skewers, on a *creel* or shelf extending the whole length of the room ; as the yarn is unwound, it is led across a glass rod, and made to pass into a leaden trough filled with water, or a weak solution of starch, which enables the lines of yarn to twist together into a more solid thread. On quitting the trough, the lines of yarn (two, three, four, or six in number, according to the desired size of the thread) are guided over a roller whereon they

\* Tables are published for ascertaining the number of hanks to the pound ; but the following is not an uncommon mode of ascertaining. 1,000 grains divided by the number of grains in a ley, gives the number of hanks per pound. This rule is founded on the fact that a ley is  $\frac{1}{16}$ th of a hank ; and 1,000 grains is equal to  $\frac{1}{16}$ th of a pound.



are laid parallel, and then made to pass down to the spindle, the rapid revolutions of which twist these parallel lines together into a solid cord or thread. The twist is given in an opposite direction to that applied by the spinning-machine, and when the thread is completed, it is then wound upon the bobbin which surrounds the spindle.

The thread is now wound into hanks

for bleaching or dyeing (two important processes, which we may notice in a future Number). The hanks of bleached or dyed thread are wound on bobbins, for the purpose of *balling* or *reeling*. The process of forming the thread into balls or reels, is performed by young women with an almost magical celerity. Each young woman is seated at a kind of turning-lathe; she seizes the end of the thread, and



BALLING AND REELING.

attaches it to a rod of steel, sets this spinning, and in an instant a ball of cotton appears at the end of the rod; the rotation is stopped, a blue ticket is inserted at the end, a further quantity of thread wound to secure the ticket, and the ball is finished. The size of the ball is regulated with extreme accuracy by the eye. The number of balls to the pound varies from 16 to 600; and the young woman being told to produce a certain number to the

pound, makes a few, weighs them until she has got the exact size by weight: after this she relies entirely upon her eye; and so accurate is her judgment, that the variation of the balls in weight is very trifling. The cotton is wound on reels with the same surprising celerity; the steel finger which delivers the thread from the bobbin, being guided to and fro to distribute it equally along the barrel of the reel. The quantity here also is judged of by

eye, and varies from 30 to 300 yards in each reel. As each reel is filled, the broken end of the thread is inserted in a notch, which the winder cuts for the purpose. Reeling is not such rapid work as balling, but is still sufficiently swift to prevent the eye from following the motion of the thread. The chief delay in both cases arises from the breaking of the thread, which during the writer's visit, occurred rather often.

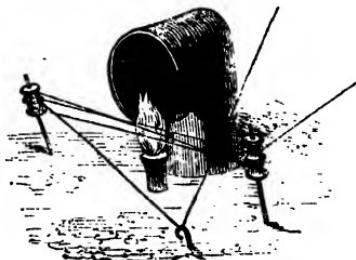
The reels are placed on end in a kind of shallow drawer, and little children cut out and paste on the labels. These labels are printed on sheets, and the back of each sheet is covered with gum, like the postage-stamps. The children stamp out the labels with a circular punch, wet the back of each against the tongue, and then press the wetted side against the end of the reel. Some idea may be formed of the extent of this business, from the fact, that a sheet, containing 144 labels, printed in blue and gold, and glazed, and then covered on the back with a layer of gum, is sold for one penny. The smallest bronzed cotton bobbin labels are sold as low as one halfpenny per gross. The writer paid a visit to the extensive establishment of Messrs. Bradshaw and Blacklock, of Manchester, where these labels are produced in large quantities. Each sheet, which is of a purple colour on one side, and plain on the other, is first printed from a copper-plate in an invisible adhesive ink; the sheet, immediately it is printed, is taken by a boy, who rubs over it, with a hare's foot, a yellow impalpable metallic powder, which passes for gold, but is really copper or bronze in a minutely divided state. The powder adheres to the printed letters and border, and is brushed off from the parts where no ink has been applied. The sheets, when perfectly dry, are hot-pressed, or calendered, which gives the glossy surface, and then covered on the plain surface with gum; when this is thoroughly dry, the sheets are pressed again, and are then ready for sale. Letter-press and copper-plate printing, as well as lithography, are all extensively used in producing labels and tickets.

The balls of cotton are tied up in small flat bundles, each containing a quarter of a pound; the proper number

is counted out, folded up in paper, and tied into a bundle, with the remarkable speed and precision which are attained only by long practice: four of these quarters are next tied up into pound parcels, which, after being labelled, are ready for the wholesale market.

#### SINGEING THE THREAD.

In fine spinning, the yarn, when doubled, is, for some purposes, *singed* or *gassed*, in order to get rid of the loose fibres, and to make it more level and compact. The process of singeing yarn strikes a stranger as being more remarkable than anything else in the mill. In a long room in the upper part of the mill, or in a shed attached to it, are several tables, lighted up with a large number of jets of flame, about twelve inches apart, producing a singular but pleasing effect. Above each flame is a little hood or chimney.



GASSING THE YARN.

On entering this room the smell of the burnt cotton is immediately perceived, and, on approaching the table, one is surprised to see a fine, delicate thread crossing each flame in two or three directions, and apparently at rest; but, on following the course of this thread, it is found to proceed from one bobbin, which is rapidly spinning round, and to pass through the flame to another bobbin, which is also in rapid motion. It is then seen that the thread is also moving at a rapid rate, by which means alone does it escape being consumed. The thread is led over pulleys, so as to pass two or three times through the flame, which singes off the loose fibres, converting them into a reddish powder or dust, which, if blown about and inhaled, would do great injury to the lungs: this is why the gassing-room is in a remote or retired part of the building, to prevent the air being dis-

turbed by the bustle of the busier parts.

After the thread has been singed, it passes over a brush, to clean it, and then through a small hole or notch cut in a projecting piece of brass, which is ingeniously made to detect any knot or foul point in the thread. The hole is so small, that there is but just room for the thread to pass; if, therefore, a knot or other impediment occurs in the thread, the piece of brass is depressed, and this is connected with mechanism which suddenly turns the gas flame aside, and lifts the bobbin off the rotating barrel which turns it, causing the whole to stop. The thread remains at rest until the attendant, called the *tenter woman*, mends the defect, and sets the bobbin in motion again. The advantage of this contrivance is, that no time is lost; for, while the defective thread stops, all the rest go on as usual. The effect of singeing is to raise the yarns to a higher number, by the diminution of their weight per *hank*. Thus, No. 90 will become No. 95; so that there is an actual difference of five hanks per pound by the operation of gassing.

#### STATISTICS.

The statistics of the cotton trade will be better understood, when the important subjects of weaving, bleaching, dyeing, and printing, are completed; but a few details respecting cotton-wool, yarn, and thread, may be interesting in this place. The amount of cotton-wool imported into England in 1845, amounted to 659,584,477 lbs., of which, 44,363,355 lbs. were exported, leaving a quantity for home consumption, amounting to 615,221,122 lbs. By far the greater part of this supply came from the United States of America. For some years past, the cotton wool imported from foreign possessions paid an import duty of 2s. 11d. per cwt.; that from British possessions paid only 4d. per cwt. From the 22nd of March 1845, this duty was wholly repealed.

In 1845, the prices of cotton-wool at Liverpool were as follows:—Sea-Island cotton-wool from 10 $\frac{1}{2}$ d. to 16d. per lb.; Upplands, 5 $\frac{1}{2}$ d. to 4 $\frac{1}{2}$ d.; Orleans, 5 $\frac{1}{2}$ d. to 6d.; Egyptian, 5 $\frac{1}{2}$ d. to 10d.; common West Indian, 4d. to 5d.; Surat and Madras, 2 $\frac{1}{2}$ d. to 3 $\frac{1}{2}$ d.

The quantity of cotton-yarn spun in England and Scotland in 1845, was as follows:—

|                       | lbs.        |
|-----------------------|-------------|
| In England . . . . .  | 467,029,465 |
| In Scotland . . . . . | 27,737,022  |
| Total                 | 494,766,487 |

The quantity of cotton-yarn exported from England in 1845, amounted to 131,937,935 lbs. Of this quantity, the principal portions were distributed as follows:—

|                        | lbs.       |
|------------------------|------------|
| The Hanse Towns, &c.   | 40,315,592 |
| Holland . . . . .      | 21,556,943 |
| Russia . . . . .       | 18,167,962 |
| India . . . . .        | 14,116,237 |
| China . . . . .        | 2,402,750  |
| Sardinia, Tuscany, &c. | 4,482,539  |
| Belgium . . . . .      | 3,917,267  |

The remainder was sent in much smaller quantities to various parts of the world.

The quantity of cotton-thread exported in 1845, amounted to 2,567,705 lbs.

The total weight of yarn in manufactured cotton-goods exported from England in 1845, amounted to 336,866,327 lbs.; the total value of which was £22,063,898.\*

Much has been said respecting the health of the operatives in cotton mills. Children under thirteen years of age are now under the protection of the legislature; they are allowed to work only half time, that is, six hours a-day; and they must attend school during some portion of the day. An excellent school, frequently under the inspection of the Committee of Council on Education, is attached to a large number of factories; and unless the children attend this every day, they are not allowed to work in the mill. It is generally arranged that those children who work during the morning attend school in the afternoon, while those that work in the afternoon go to school in the morning.

The writer was agreeably disappointed to find that the work-people in the mills had by no means that sickly appearance which he had been led to expect. On the contrary, many of the younger females were stout.

\* The above statistical facts are stated on the authority of *Burn's Commercial Glance*, Manchester, 1846.

healthy-looking girls, and others, though not ruddy, were lively and active in their movements, and in their expression of countenance. There were no symptoms of suffering or disease among the young people in any of the mills visited by the writer. Perhaps the most trying operations in the cotton-mill are *willowing*, *batting*, and *carding*. The rooms in which they are carried on are clouded with fine particles of cotton, which sometimes set a stranger coughing immediately on entering : this is probably injurious to

the work-people. Most of the men in these rooms were pallid in their complexions, and, though from habit they are not subject to the same inconvenience and difficulty of breathing which strangers suffer, there are evident marks of a languid state of health in the countenances of some. In judging from their appearance, however, it is necessary to make due allowance for an artificial whiteness, produced by the particles of cotton, which settle abundantly on their faces and hair.

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CHRIST RECEIVETH LITTLE CHILDREN.



THEY brought young children to Christ : Mark x. 13.

Whatever argument this Scripture may be for the baptism of infants, it shows plainly how eager parents were, at the time, to gain every spiritual benefit for their young children. They desired that their children might be *touched* by a Holy Man, not thinking he would take them up in his arms.

It appears from the account of the other Evangelists, that Christ took a child in his arms as an *emblem* of innocence, in order to teach his disciples

how simple and free from guile they ought to be—children in *malice*, though men in understanding; but St. Mark's account gives more idea of our Saviour's attending to the children themselves. Why might not our Lord both feel a kind concern for the children, and take occasion from them to inculcate godly sincerity and simplicity? if his feelings were lively, his moral would be strong.

He admitted them to no *covenant*, but he blessed them affectionately, holding them in his arms: his benediction, surely, must be some *spiritual* good. My reason dare scarcely make an argument from this interesting scene, but when I contemplate it, I always wish myself a painter, that I might give a lasting representation of it. What an attitude might not that of Jesus be! What a countenance, looking down, with a mild and gracious benevolence, on the infant in his arms! expressing a deep knowledge of what was in man! Other children, of different ages and characters, grouped in various employments; the officious disciples, with ill-grounded apprehensions and needless importance, endeavouring to disperse them; the mother of the child in our Saviour's arms, near him, expressing, as one principal figure, in her face and gesture, suspense and hope, not without some degree of fear—joy, refined and meliorated with parental affection and piety: other parents, some mildly triumphing in the benediction already received, others gently pressing forward to attain it! Though reason may scruple to draw an argument from this scene, yet who that performs the ceremony of Baptism does not feel its efficacy? The infant in one's arms excites a sentiment of tenderness; the Gospel has been just read, the ceremony becomes, to the imagination, an imitation of the benevolence of Him who appointed it. And then this Scripture pleads to the heart more forcibly than any coarse audible eloquence: it even convinces more intimately than the logic of any precise reasoners, who, by too great stiffness in adhering to what is minutely right, are often found substantially in the wrong.—*Hey's Lectures.*

#### ON THE MASSACRE OF THE WALDENSES IN PIEDMONT.\*

Avenge, O Lord, thy slaughter'd saints, whose bones  
Lie scatter'd on the Alpine mountains cold;  
Ev'n them who kept thy truth so pure of old,  
When all our fathers worshipp'd stocks and stones,  
Forget not; in thy book record their groans  
Who were thy sheep, and in their ancient fold,  
Slain by the bloody Piedmontese, that roll'd  
Mother with infant down the rocks. Their moans  
The vales redoubled to the hills, and they  
To Heaven. Their martyr'd blood and ashes sow  
O'er all th' Italian fields, where still doth sway  
The triple tyrant: that from these may grow  
A hundredfold, who having learn'd thy way  
Early may fly the Babylonian woe.

MILTON,

\* The massacre of these simple and unoffending people excited general indignation in Protestant Europe. Cromwell wrote an energetic letter to the Duke of Savoy on the subject.

THE  
HOME FRIEND;

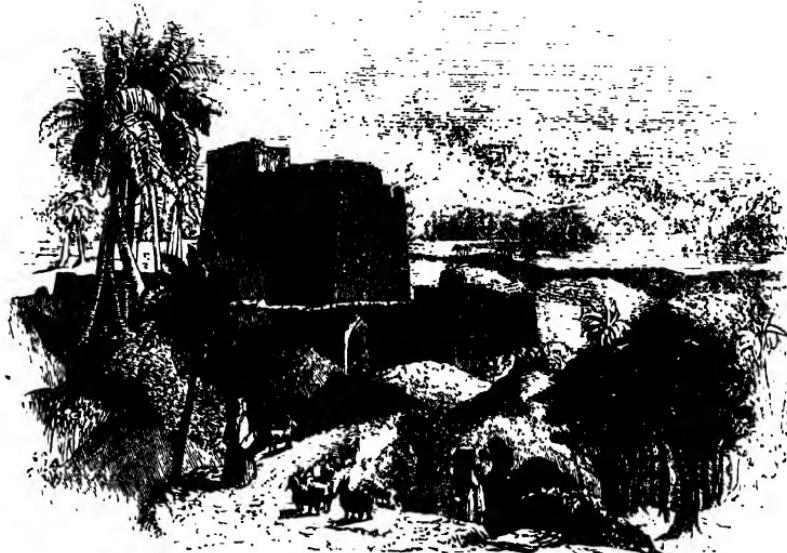
A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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SCRIPTURE TOPOGRAPHY.—THE HOLY LAND.



JERICHO, AND THE JORDAN.

JERICHO.

THE village of Eriha, or Rîha, which has been supposed to represent the ancient Jericho, is situated in the midst of the vast and beautiful plain of that name. "The plain is rich, and susceptible of easy tillage, and abundant irrigation, with a climate to produce anything. Yet it lies almost desert; and the village is the most miserable and filthy that we saw in Palestine. The houses, or hovels, are merely four walls or stones taken from ancient ruins, and loosely thrown together, with flat roofs of corn-stalks or brushwood, spread over with gravel. They stand quite irregularly, and with large intervals; and each has around it a yard, enclosed by a

hedge of the dry thorny boughs of the nûbk. In many of these yards are open sheds with similar roofs ; the flocks and herds are brought into them at night, and render them filthy in the extreme. A similar but stronger hedge of nûbk branches surrounds the whole village, forming an almost impenetrable barrier. The few gardens round about seem to contain nothing but tobacco and cucumbers. One single solitary palm now timidly rears its head, where once stood the renowned ‘city of palm-trees.’ Not an article of provision was to be bought here, except new wheat unground. We had tried last evening to obtain something for ourselves and our Arabs, but in vain ; not even the ordinary lentiles were to be found. . . . The people of Jericho are too indolent, or, as it was said, too weak, to till their own lands (and strangers had now come down into the plain to gather in the wheat-harvest, which was beautiful), and cultivated solely by irrigation, without which nothing grows in the plain. But the feeble and indolent inhabitants of Jericho give themselves little trouble in respect to their agriculture. The fig-trees grow large and require little care ; and their fine fields of grain, as we have seen, are sown and harvested by strangers. A few patches of tobacco and cucumbers seemed to be the amount of their own tillage. . . .

“The climate of Jericho is excessively hot ; and after two or three months becomes sickly, and especially unhealthy for strangers. According to our Arabs, the sojourn of a single night is often sufficient to occasion a fever.”

The fertility and the various productions of the environs of Jericho have been celebrated in every age. Josephus, the great Jewish historian, frequently extols their exceeding richness and beauty. He calls this region the most fertile tract in Judæa ; and speaks of its beautiful gardens, and groves of palms of various species which grew even along the banks of the Jordan, besides many other productions, as honey and balsam, and the common fruits of the earth in rich abundance. Few of these things now remain. One solitary palm-tree only lingers in all the plain ; honey, if found at all, is now comparatively rare ; the sycamore has retired from Jericho (Luke xix. 4) ; and one tree alone, besides the nûbk, appears to thrive still, called by the Arabs Zukkûm.\* This is a thorny tree, not large, with greener and smoother bark than the nûbk, and bearing a green nut, having a very small kernel and a thick shell, covered with a thin flesh outside.† These “kernels the Arabs bray in a mortar, and then putting the pulp into scalding water, they skim off an oil which rises to the top. This oil they take inwardly for bruises, and apply it outwardly to green wounds, preferring it before balm of Gilead. I procured a bottle of it, and have found it, upon some small trials, a very healing medicine.”‡ This is the modern balsam or oil of Jericho. . . . Another plant, which was formerly cultivated in abundance in the plains of Jericho, has also disappeared ; viz., the sugar-cane. The earliest Crusaders, it is said, found large tracts of these canes on the coast of the Mediterranean as far south as Tyre ; and the warriors amid their sufferings often refreshed themselves with the juice. These canes, we are told, were also cultivated very extensively on the plains of the Jordan, around Jericho ; where the many hermits of that region probably lived upon them, regarding the juice as the wild honey of John the Baptist.

\* Sometimes called Oleaster, or wild olive.

† This fruit, Maundrell observes, both in shape and colour resembles a small unripe walnut.

‡ Maundrell.

"We took a walk to the fountain, whose waters are scattered over the plain ; it is the only one near Jericho, and there is every reason to regard it as the scene of Elisha's miracle. It lies nearly two miles from the village and castle. . . The fountain bursts forth at the foot of a high double mound, or group of mounds situated a mile or more in front of the mountain Quarantana. It is a large and beautiful fountain of sweet and pleasant water. It seems to have been once surrounded by a sort of reservoir, or semicircular enclosure of hewn stones ; from which the water was carried off in various directions to the plain below ; but this is now mostly broken



FOUNTAIN OF ELISHA.

away and gone. At the back of the fountain rises up the bold perpendicular face of the mountain. The top of the mound above the fountain commands a fine view over the plain of Jericho, which needs only the hand of cultivation to become again one of the richest and most beautiful spots on the face of the earth. The fountain pours forth a noble stream, which is scattered in rivulets over a wide extent, while the still more copious streams from another fountain are in like manner distributed. By these abundant waters, fertility and verdure are spread over the plain almost as far as the eye can reach . . . But, alas ! almost the whole of this verdure at the present day consists only of thorny shrubs, or trees of the thorny nûbk. It is a remarkable instance of the lavish bounty of nature contrasted with the indolence of man. Where the water does not flow the plain produces nothing. . .

"We passed up the side of a deep precipitous valley, where the scene became bold and grand, and formed a high rocky pass on either side of a little dry watercourse. This was Wady Kelt. Hence we descended into the celebrated valley of El Ghor, which now lay spread before us, with the Jordan marked out in all its windings by the fringe of dark vegetation on its banks, the nearer stream of the fountain of Elisha also nourishing a rich luxurious jungle in its course ; Riha, with its ruined tower—the mountains of Moab rising gradually, like a wall from the opposite side of the valley, and the northern end of the Dead Sea, with its calm metallic-looking waters. . . We descended into that fine yet burning plain, crossed the dry bed of Wady Kelt, and passing through a tract, thick set with bushes of the thorny nûbk, whose sweet berries we often stopped to gather, we came

upon a beautifully limpid, gushing stream, which feeds on its further side rich groves of most lovely trees, and a rank jungle of reeds, and nûbk, and shrubs, water and shade in rich luxuriance. A little further on we find the source, the fountain itself, and here we pitch our tents, where we can revel in the shade and drink of that sweet bubbling water. The water of the fountain of Elisha is received into a large square basin, which is overshadowed by an umbrageous fig-tree—the liquid itself is pure and sweet. While dinner was preparing, and after I had drank deeply of the delicious stream and enjoyed the dark shade of the fig-tree, I rambled with my gun into the jungle. It was so thick and tangled that I made my way with a difficulty which was increased by the prickly nature of all the brushwood, which was chiefly nûbk. Here and there, among the tall cane brakes of reeds, I came upon the lair of some large wild beast . . . of birds I saw but few; although from the warbling chorus of the evening, there must have been many, yet I watched the graceful movements of a little sun-bird sucking the sweetness from the flowers of a lilac vetch, which grew here very luxuriantly. The prickly lilac flowered *Solanum Melongena* was plentiful about the fountain, whose apples are supposed by some to be the ‘apples of Sodom.’ A small pink lychnis, and a great variety of vetches of divers shades of lilac and yellow, attracted many beautiful insects. The heat was intense. At night it was impossible to sleep, (so) I sallied forth to chase the many fire-flies which were dancing in the air. They proved to be very small beetles, black and red, carrying their light in the abdomen and thorax. . . . Behind me were lofty mountains, and around, the watch-fires of two or three groups of Arabs. The dark jungle was at my feet, and the beasts of the forest were awake, seeking their nightly prey.”—Woodcock’s *Scripture Lands*.

“The castle and village of Rîha lie upon the northern bank of the valley Kelt, here the bed of a mountain torrent, at the distance of nearly two miles from the point where it issues from the Western Mountains. . . . It dries up in summer, as was now the case; but the brook in some seasons



PLAINS OF JERICHO.

continues to run much later. It is not improbable that this valley, Kelt, may have been the brook Cherith, where the prophet Elijah hid himself,

and was fed by ravens." "While I gazed into Wady Kelt, two *ravens*, each soaring apart, swept down between the jagged and precipitous rocks and disappeared in the windings of the gorge, uttering at intervals their hoarse discordant croak."\*

"It is not, however, at Riha that we must look for the ancient Jericho of the Scriptures. The earliest city of that name would naturally have been adjacent to the fountain; and the site of the later Jericho may have been changed in order to evade the curse. There are some ruins and remains at the distance of half an hour from the fountain, situated around the opening of the valley (Kelt), at the foot of the mountains of Judaea, which in all probability mark the site of the Jericho of Herod and the New Testament."—See ROBINSON's *Researches*, vol. ii. pp. 276—299.

The position of these ruins agrees with the description given of Jericho by the Jewish historian, Josephus. "It is situate in a plain," he says, "but a naked and barren mountain of very great length hangs over it, which extends itself to the land about Seythopolis† northward, but as far as the country of Sodom, and the utmost limit of the (Dead Sea) southward. This mountain is all of it very uneven, and uninhabited by reason of its barrenness."

"Nothing," observes Mr. Buckingham, "can more accurately apply in all its particulars than this description does to the site of the present ruins, assumed here as those of the ancient Jericho... The spot lies at the very foot of the barren hills of Judaea, which may be said literally to overhang it on the west; and these mountains are still as barren, as rugged, and as destitute of inhabitants as formerly throughout their whole range, from the lake of Tiberias to the Dead Sea."—BUCKINGHAM'S *Travels*, vol. ii. pp. 62, 63.

"Just before entering the village (Rihah), we crossed a small brook which flows from the north-west, and has its rise in the fountain pointed out as that which Elisha healed. About this brook, and spreading out over the plain, were a number of bushes, mostly of the thorn kind, and not unlike what I have heard called the white thorn (in America). The largest of them were about as high as a peach-tree, but were rather a clump of branches growing out of one root, than branches from the same stem. They have many very sharp thorns on them. Some of them bore an apple, of a whitish colour, larger than a grape. There was also another bush with prickles on it, which grew from four to five feet high. It bore a yellow fruit, about as large as the apricot, that looked very rich and pretty, enticing the appetite, but the taste was unpleasant and indescribably nauseous. When cut, they were soft and watery."—PAXTON, pp. 154, 155.

"About half an hour from Riha, we passed a tower denominated Kasr Hajlah, or castle of Hajlah, equivalent to the Hebrew Hoglah, and doubtless marking the site of the Beth Hoglah of Scripture. A fountain a little to the east of it is denominated 'Ain Hajlah. This site has long been identified."—WILSON's *Lands of the Bible*.

"Early after we set out, we left the stream of Elisha and the wild verdure which it nourishes; and then came to an absolute waste of clay, much impregnated with salt, and presenting frequent crustations and inflorescences where little pools of water had been standing. It is probable that it was in this soft, alluvial soil that the vessels of the temple were cast in the days of Solomon." 1 Kings vii, 46; 2 Chron. iv. 19.

\* Woodcock's 'Scripture Lands.'

† Bethshan.

## A STITCH IN TIME.



IT is a beautiful feeling which connects the superior with the inferior, and binds the interests and the pleasures of both into one. We talk of the envy and discontent that pervade certain classes, and we deplore their effects; but surely it is far more congenial to the spirit of charity to dwell on the mutual good-will, the genuine sympathy, that unite the great with the humble, the aristocratic peer with the industrious occupier of his lands. Woe be to them who attempt to disturb this happy understanding; to them who would pluck up by the roots some of the sweetest flowers that adorn the wide field of human society, and plant in their stead the briar, the thistle and the thorn!

"Not know what the bells are ringing for so merrily, young gentleman?" exclaimed a neat old woman, her silver hair combed smoothly on her forehead, and her cap and handkerchief and apron as white as the drifted snow, her dim eyes at the same time lighting up with the brightness of former days; "Not know what the bells are ringing for? You must be a stranger indeed to these parts to ask such a question. Isn't it because the young lord is come of age to-day; and arn't my lord and lady so happy about it, and every one belonging to them happy too? Go to the park yourself to-day—any one may go that likes, and see the grand doings, and then ask again, if you can, why the bells ring so merrily and everybody looks so pleased."

Whether the stranger followed the advice given him is of no present moment: had he been the Emperor of all the Russias he would have been no "Lion" that day; nor would any one have cared to know how he meant to dispose of himself. There were plenty who needed no urging to make one of the joyous party, and who would not have waived their privilege in favour of the great Czar himself. Among these were Mrs. Maxwell and her daughter, Mary, who, having accepted the invitation of Mr. and Mrs. Foreman, her brother and sister-in-law, to be present on the occasion, were now on their way to Mereswell. The anxious mother, who had her daughter's proper appearance as much at heart as her enjoyment of the pleasures of the day, and who was but too well acquainted with that daughter's foible, took the opportunity, as they rode along, to impress

upon her mind the wise instructions she gave her—instructions which were quickened by the sound of the bells, and the increasing concourse of persons on the road.

"Now, Mary," said she; "mind what I am going to say to you. You know your father has given his consent that you should remain with your aunt and uncle for the next two or three days, should they invite you; and this I am pretty sure they will do." Mary's eyes sparkled with pleasure, and her imagination furnished her with images of delight by no means favourable to the serious attention expected from her. "I shall probably have no opportunity of speaking to you alone, for I must go back this evening. I have looked over your clothes very carefully, and I am sure there is nothing wanting—there is not a stitch awry, but you may meet with an accident, and something may give way. I have brought very few things with me, for I should not like to have it thought that I intended you should be asked to stay; be careful, then, that you take a needle at once, and repair whatever is amiss—a hole in your stockings, or a slit in your petticoat, would give you a very untidy appearance, and would be a great mortification to me if I should hear of it. Remember then, once for all, what I believe I have a thousand times repeated—'a stitch in time saves nine.'"

Poor Mary could not boast of having a very good memory, but it must have been bad indeed not to have retained the oft-repeated adage; but alas! it had hitherto, as her mother observed, "come in at one ear, and gone out at the other;" certainly it had made no practical impression upon her; for, if the truth be spoken, it would have been no easy matter to have found a little girl who had profited less by the repetition of a maxim, of which daily experience in her own person proved the right application.

As Mrs. Maxwell anticipated, Mary received a kind and pressing invitation to remain for at least two days longer. A succession of festivities had been announced, and a dance on the lawn, fireworks, and nobody knew what besides, were to crown the whole. O what a happy day was Tuesday! There were games and races, cricket matches, archery parties, with all that was luxurious and delightful in the way of refreshments. Even Mrs. Maxwell lamented that she was obliged to resist the entreaties of her sister to remain longer, and departed with regret, but not without again reminding Mary of the value of the "stitch in time."

The only thing that Mary had required was a pair of gloves. She had her mother's permission to purchase these; and accordingly she and one of her cousins sallied forth early in the morning for the purpose. The prettiest and almost the only pair she could procure (for the fête at Moreswell Park had considerably reduced Mr. Scott's stock, not only of gloves, but of almost every other article of apparel) was a little too small for her. However, by means of stretching, breathing into them, turning down the tops whilst the fingers were carefully drawn into the parts designed for them, the whole hand was inserted, and it was the unanimous opinion of all that they would "do" very well indeed. The stitches on the thumb alone gave way; but this was of no consequence, it would not take a minute to repair the injury, and her aunt offered her a needle and silk the moment she was shown what had happened. But Mary had no occasion to be indebted to any one for such implements, her careful mother having already provided her with them. She ran up stairs, and had put on her thimble, when the sound of carriages attracted her to the window. Thus amused, the gloves were forgotten, and when her uncle in a loud

voice bade them all "be quick," as he was nearly ready to go, Mary had to use double despatch to dress herself in time.

The day was warm, and Mary was in trepidation lest she should detain her uncle. She drew on her gloves in haste, and the few stitches which had given way previously, now made a rapid retreat, and left a wide breach between the thumb and the palm of the hand, which threatened to extend itself still further. Was ever anything so tiresome? And now, to make bad worse, she recollects that the sandal of her shoe had come unstitched the evening before—what must she do? She had not a moment to spare—she seized a pin, secured the ribbon, ran down stairs, and was seated by her aunt in a moment. Fearful, however, of her glove being seen, she took great care to keep her hand out of sight, well aware that Mrs. Foreman would be much vexed at her neglect.

One of the principal amusements of this day was a rowing match on the lake, which was of great extent and beauty. Great numbers of persons were, as might be expected, congregated on its bank, near which seats were provided. Mary would have liked to have been on the water, or at least to have gone to the island, where a tent was pitched, and a band of music placed: but this was a gratification which was not likely to be afforded her, for it was said to be confined to members only of the family. She and her aunt, however, occupied an excellent situation; and all that was to be seen, was seen by them to the best advantage.

Thus engaged, neither of them perceived the approach of Lady Leslie. Mrs. Foreman started from her seat when her ladyship addressed her, and made an apology for not having seen her. With all the urbanity of polished manners, and with the sincerity of a sweet disposition, her ladyship begged of her not to distress herself, and to be again seated, "and if you have room," added she, "I will take a place by you." Mary so near Lady Leslie as to touch her dress! She could scarcely believe that she was not in a dream. She stole a look at her, in which a sentiment almost of awe was expressed, and she listened to the gentle tones of her voice with growing confidence and admiration. Mr. Foreman held one of the largest farms under Lord Leslie, and both he and his wife were much respected by the family; Mrs. Foreman, in particular, often came in contact with her ladyship, as she took an active part both with the poor and in the schools.

After a few general observations, Lady Leslie's attention was drawn to Mary, whose appearance, in truth, was greatly in her favour, for she was remarkably pretty, and, thanks to her mother, was dressed in a very becoming and simple manner.

"And whom have we here?" asked her ladyship, looking at Mary with evident pleasure.

"My niece, Mrs. Maxwell's daughter," replied Mrs. Foreman.

Lady Leslie smiled pleasantly upon her. "I make no doubt," said she, "you would be kind enough to fetch my parasol. I left it on that bench."

Mary needed no second request; she sprang from her seat, and almost instantly returned with the parasol.

"I am very much obliged to you," said her ladyship, extending her hand; "but look, my dear, the sandal of your shoe is unfastened. You had better secure it, or it may throw you down."

Mary coloured like lightning, and immediately stooped to the ground. There was no need to offer her a pin as the only means of securing it, had the idea presented itself to either of them, for, as she was hastily tucking the string into her shoe, the pin she had formerly used for the purpose was

visible both to her aunt and Lady Leslie ; while, as the most provoking ill-luck would have it, the rent in her glove, which she had managed to conceal by awkwardly presenting the parasol to her ladyship with her left hand, was displayed. Mrs. Foreman cast an angry glance at her, whilst Lady Leslie, compassionating her evident confusion, and not knowing, of course, what had before passed, sought to relieve her by not seeming to have observed either circumstance.

"There is my son," said she pointing to a gentleman who was stepping into a boat near them. "I dare say that both your niece and daughter, Mrs. Foreman, would like to go on the island ;" and without waiting for a reply, she pronounced aloud the name of Lord Mereswell. He was before her in an instant. "You are going to the island, probably," said she ; "take charge of these young ladies, who, I understand, have a desire to see it."

Poor Mary was almost overwhelmed with such an honour ; but what was her vexation, when, on giving her hand to Lord Mereswell, who had extended his own to assist her to enter the boat, the eyes of both fell on the now nearly severed thumb of her glove ! She could have wept with mortification ; and the more so as she was aware, whether he saw it or not, that a piece of her sandal was hanging out of her shoe. But for this she would have been charmed with the polite attention paid her on this short voyage : as it was, she was ill at her ease, and was tormented with the thought that she must land, and that the severed thumb must be again displayed. She avoided this, however, by quickly jumping from the vessel to the land ; and a compliment from his lordship on her activity made her forget her past uneasiness, and enabled her to enjoy the pleasures that awaited her.

On their return home, Mrs. Foreman expressed in strong terms her displeasure at the neglect of Mary, assuring her that if she were not ashamed of the untidy appearance she had made, she herself felt it a disgrace. "Lady Leslie has kindly invited us to-morrow, the last day of the fête, and the grandest," said she ; "the fireworks in the evening will be beautiful, I understand ; and that we may take no cold, she has desired us to join a party in one of the rooms in the hall. I was told that other amusements are in contemplation ; and from the manner in which her ladyship spoke, I am sure she intends that we should share in them."

"But my frock, aunt ?" said Mary, doubtfully ; "I have but this one."

"Your frock shall be washed," replied her aunt ; "a clean muslin always looks well, and I will myself give you a sash."

Mary was full of thanks—the frock was washed, the sash bought, as was also another pair of gloves ; and anticipation beat as high in the bosom of Mary as in that of many of her superiors on the eve of a first presentation.

When her frock was taken into her bed-room, she indulged herself with a survey of it, and, to try the effect, laid the sash upon it. It more than answered her expectations. O how she wished the evening was come ! Would Lady Leslie, would Lord Mereswell, take any notice of her ? She flattered herself they would—her dress was very pretty, and she would take great pains with her hair. All of a sudden it occurred to her that she had stepped upon her frock as she was going up stairs the evening before, and that one of the tucks had slightly given way. She meant to have mended it before it went to be washed, but the servant had taken it away sooner than she expected. Not more than two inches were unsewn, and this could be of no consequence, as the starch, and it was beautifully stiff,

would hold the parts together as well as thread could do : at all events she would not run the risk of crumpling her dress now, it was so charmingly smooth.

Evening came, Mary was dressed, and never before had she been so well satisfied with her appearance. It was not late when they left home ; but she fancied it was ; she was certain the horse went only a snail's gallop ; and the excitement expressed on the countenance of many who passed them, or whom they overtook, communicated itself to her own heart, and made it beat with a rapidity hitherto unknown to her. As they approached the hall the carriages were more numerous, and every delay made Mary not only more impatient, but awakened apprehensions that, numerous as were the apartments in the noble mansion they were about to enter, there might not be room left for themselves. At length they reached the steps at the entrance—they stopped, the door was opened by one of the splendidly-dressed attendants ; out bounded her cousin ; still more eagerly out sprang Mary after her. Alas ! alas ! the toe of her shoe was caught in the tuck, a large rent followed, and it was well for her that such was the case, for it broke her fall, which otherwise might have been serious. She was, however, thrown forward with such force, that, striking her face upon one of the steps, she was instantly covered with blood. It was soon ascertained that she had received no material injury : but though the bleeding at her nose was soon stopped ; her frock was in such a state, that no alternative was left her but to return in the same carriage in which she had been brought. Poor Mary ! what disappointment could be equal to her's ! With what different feelings did she enter her aunt's house from those which affected her when she quitted it !

Alarmed at her speedy reappearance, and at her being a one,—for her aunt and uncle had seen no reason why they should deprive themselves or their daughter of pleasure by returning with her,—the old servant of the family demanded the cause.

“ O Miss !” cried she ; “ what has happened ? you are all over blood !”

“ That's of no consequence,” exclaimed Mary ; “ but to be so disappointed ! I have had a fall, Rachael—the tuck of my frock—that stupid tuck which—”

“ Which I heard you say last night you were going to mend,” said Rachael, shaking her head. “ O Miss, Miss, the tuck has not been to blame. What a pity it is that you did not remember your mother's last words, and let a stitch in time have saved you from all this !”

#### ON VALUE.

GOLD and silver are the most convenient metals to use as money, because they take up but little room in proportion to their value. Hence they are called the precious metals.

But why should gold and silver be of so much more value than iron ? For they are not nearly so useful. We should be very ill off without knives, and scissors, and spades, and hatchets ; and these could not be made so well from anything as from iron ; and silver and gold would make very bad tools indeed.

To understand this, you must remember that it is not the most useful things that are of the most value. Nothing is more useful than air and

water, without which we could not live. Yet these are, in most places, of no value, in the proper sense of the word; that is, no one will give anything in exchange for them, because he can have them without.

In some places, indeed, water is scarce; and then people are glad to buy it. You may read in Scripture of many quarrels that arose about wells of water; because in some of the eastern countries water is so scarce that a well is a very important possession. But water is not more useful in those places where people are glad to buy it, than it is here, where, by the bounty of Providence, it is plentiful. It is the scarcity that gives it value; and where iron is scarce it is of great value.

Some islands which our ships have visited produce no iron; and the people there are glad to get a few nails in exchange for a hog. But, in most countries, iron, which is the most useful of all metals, is also, through the goodness of Providence, the most plentiful. But still it is of some value; because it must be dug from the mines, and smelted in furnaces, and wrought into tools, before we can make use of it. If knives and nails were produced by nature ready made, and could be picked up everywhere like pebbles, they would be of no value, because every one might get them for nothing; but they would be just as useful as they are now.

Scarcity alone, however, would not make a thing valuable if there were no reason why any one should desire to possess it. There are some kinds of stones which are scarce, but of no value, because they have neither use nor beauty. You would not give anything in exchange for such a stone; not because you can easily get it, but because you have no wish for it.

But a stone which is scarce and very beautiful, may be of great value, though it is of no use but to make an ornament for the person. Such are diamonds, and rubies, and many others. Many people will work hard to earn money enough to buy, not only food and necessary clothing, but also lace, and jewels, and other articles of finery.

And they desire these things the more, because, besides being beautiful to the eye, they are reckoned a sign of wealth in the person who wears them. A bunch of wild flowers will oftener be a prettier ornament than a fine ribbon, or a jewel; but a woman likes better to wear these last, to show that she can afford the cost of them; whereas the wild flowers may be had for picking.

There is no harm in people desiring to be well dressed according to their station in life; but it is a pity that so many should be fond of expensive finery above their station, which often brings them to poverty. And often they spend money on ornaments, which would be better laid out in buying good useful clothes and furniture, and in keeping them clean. A mixture of finery with rags and dirt is a most disgusting sight.

You understand now, I hope, that whatever is of value must not only be desirable for its use or beauty, or some pleasure it affords, but also scarce; that is, so limited in supply that it is not to be had for nothing. And of all things which are desirable, those are the most valuable which are the most limited in supply; that is, the hardest to be got.

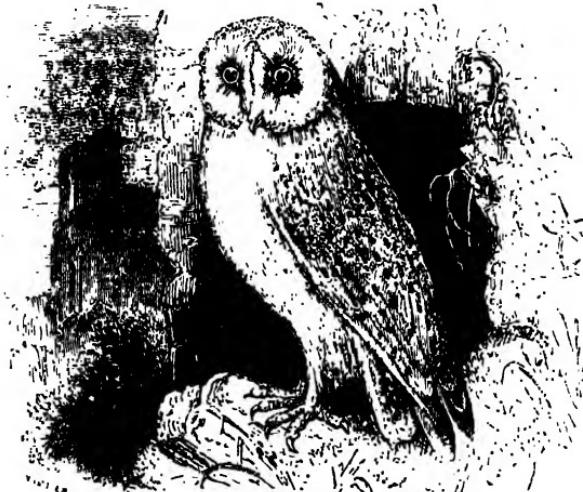
This is the reason why silver and gold are of more value than iron. If they had been of no use or beauty at all, no one would ever have desired them; but being desirable, they are of greater value than iron, because they are so much scarcer and harder to be got. Until very recent times they have been found but in small quantities. Gold is obtained chiefly in the form of dust, by laborious washing of the sand of certain streams. It costs as much in labour and other expenses to obtain

fourteen pounds of silver, as to obtain one pound of gold ; and this is the cause that one pound of gold will exchange for about fourteen pounds of silver.

But besides being desirable and being scarce, there is one point more required for a thing to have value ; or, in other words, to be such, that something else may be had in exchange for it. It must be something that you can part with to another person. For instance, health is very desirable, and is what every one cannot obtain ; and hence, we sometimes do speak of health as being of value ; but this is not the strict use of the word value ; for no one can give his health to another in exchange for something else. Many a rich man would be glad to give a thousand pounds, or perhaps ten thousand pounds, in exchange for the healthy constitution and strong limbs of a poor labourer ; and, perhaps, the labourer would be glad to make such a bargain ; but, though he might cut off his limbs, he could not make them another man's : he may throw away his health, as many do, by intemperance ; but he cannot transfer it—that is, part with it to another person.

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#### THE OWL.



OWLS are readily distinguished by the largeness of their globular head, their flattened face, their large and dilated eyes, situated at the bottom of a shallow cone of feathers, their round beak almost hidden in these feathers, their sharp, curved talons, their soft unwebbed puffy plumage, and the peculiarly silent character of their flight. Their wide pupil is ill fitted for vision in the strong day, during which they sit erect and motionless, winking their eyes, with a ludicrous gravity : and if disturbed at this time, as if conscious of their disadvantage, they seem unwilling to fly, but stare upon the intruder, draw themselves into a more erect attitude, and make odd gesticulations, and hissing sounds. But on the approach of evening all this awkwardness and apparent stupidity vanishes ; they become watchful, lively, and animated ; with the eye dilated like a moon, they investigate

every corner, gliding to and fro with great activity, lowering and protruding their head in all directions. The small quadrupeds which run abroad in the gloaming are their natural prey. The largest species, such as that "great northern hunter," the Snowy Owl (*S. Nyctea*), the Eagle Owls of Europe and America (*S. Bubo* and *S. Virginiana*), pounce upon hares, rabbits and squirrels, ducks, grouse, &c.; while the smaller, but much more useful kinds, wage unceasing and successful war upon the various species of field mice and voles, that so largely consume the harvest of the husbandman. White says, "About an hour before sunset, (for then the mice begin to run,) they sally forth in quest of prey, and hunt all round the edges of meadows and small enclosures for them, which seem to be their only food. In this irregular country, we can stand on an eminence and see them beat the fields over like a setting-dog, and often drop down in the grass or corn. I have minuted these birds, with my watch, for an hour together, and have found that they return to their nest, the one or the other of them, about once in five minutes; reflecting, at the same time, on the adroitness that every animal is possessed of, as far as regards the well-being of itself and offspring."\* Mr. Jenyns also confirms the accuracy of this statement, from his own observation. Thus, it appears that our commonest species, the Barn or Sereech Owl (*S. Flammed*), the one alluded to above, is a most industrious and valuable friend to the farmer, and deserving of far more respect and consideration than it receives. Looked upon with contempt, as a stupid, insensible creature, or regarded with a superstition still more degrading, as the harbinger of mischief and death, the poor Owl obtains no quarter when it unfortunately falls into the merciless hands of the vulgar, who, with a blindness to their own interest by no means unusual, destroy friends as if enemies. Its sad and wailing cry, uttered in the silence of the night, its silent ghost-like flight, the lonely gloomy spots which it loves to haunt,—characters which are common to the whole genus,—have, perhaps, in some measure, induced the popular abhorrence which has fallen to its lot. It is the province of the Naturalist, however, to combat absurd prejudice, and to allot to every creature, as far as possible, its true character. The voices of the larger species are, it must be confessed, anything but agreeable. Wilson, with his usual felicity, has given a description of the nightly serenade of the great Eagle Owl of the United States (*S. Virginiana*), to the truth of which the writer of the present work can witness, having often heard it in the lone forests of West Florida. "His favourite residence is in the dark solitudes of deep swamps, covered with a growth of gigantic timber; and here as soon as evening draws on, and mankind retire to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim as he slumbers by his forest fire,

‘Making night hideous.’

"Along the mountainous shores of the Ohio, and amidst the deep forests of Indiana, alone, and reposing in the woods, this ghostly watchman has frequently warned me of the approach of morning, and amused me with his singular exclamations, sometimes sweeping down and around my fire, uttering a loud and sudden *Waugh O! Waugh O!* sufficient to have alarmed a whole garrison. He has other nocturnal solos, no less melodious; one of which very strikingly resembles the half-suppressed screams of a

\* Nat. Hist. Selb. Jenyns' Ed. p. 206.

person suffocating, or throttled, and cannot fail of being exceedingly entertaining to a lonely benighted traveller, in the midst of an Indian wilderness!"\* This bird belongs to the division which has two singular tufts of feathers on the head, resembling horns, when elevated. The whole tribe build a rude nest, chiefly composed of sticks, covered with a bed of feathers, and usually concealed in a hollow tree, or similar place.

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ASSYRIA—HISTORY.



NEBBI-YUNUS AND THE TIGRIS.

IT was from the mountains of Ararat, on which the ark of Noah rested, that the fathers of the new world descended to repeople the earth after its destruction by the flood. The early fathers supposed,—and several passages of Scripture, as well as probability, countenance the supposition,—that the distribution of the families of mankind over the various regions of the earth was not felt to be fortuitously determined, as accident or caprice might direct their wanderings, but that a formal division of the earth was made by Noah into three portions, one of which was assigned to each of his sons with his posterity. The name given to Peleg, "because in his days the earth was divided" (Gen. x. 25), would seem to be a memorial of this transaction, and would indicate that it took place about a century after the deluge, when men were beginning to multiply sufficiently to form colonies and settlements, but while Noah, the common progenitor, was yet in the vigour of his life.

The whole of the region, described in the preceding number, formed part of the allotment of Shem; but here, in defiance of the divine decree, one of the sons of Ham, Nimrod, "a mighty hunter," determined to set up kingly rule, and to establish his own dominion. His name, signifying "a rebel," has been supposed to refer to this usurpation; and tradition, both Jewish and Gentile, is profuse in legends of the power, haughtiness,

\* Am. Orn. vol. i. p. 100.

cruelty, and idolatry of this first “king of men.” The sacred narrative, however, is very laconic. Its information concerning the settlement of these regions, and the erection of the two greatest and most renowned empires of ancient history, is comprised in the following words:—

“And Cush begat Nimrod: he began to be a mighty one in the earth. He was a mighty hunter before the Lord: wherefore it is said, Even as Nimrod the mighty hunter before the Lord. And the beginning of his kingdom was Babel, and Erech, and Accad, and Calneh, in the land of Shinar. Out of that land went forth Asshur, and builded Nineveh, and the city Rehoboth, and Calah, and Resen between Nineveh and Calah: the same is a great city.” Gen. x. 8—12.

The words “went forth Asshur,” may be rendered, with equal propriety, “he (that is, Nimrod) went forth into Assyria,” as the margin of our version gives it. According to it Nimrod himself, for some reason or other, migrated from the land of Shinar, after having commenced his kingdom there, and founded new cities and seats of power on the banks of the upper Tigris. The words “the beginning of his kingdom was Babel,” &c., seem to favour this reading.

Assyria, moreover, is expressly called “the land of Nimrod” by the prophet Micah, v. 6.

The chief deity in the Assyrian mythology was Assarah, or Assarac, of whom we shall have occasion to speak more particularly. This was, in all probability, the Asshur of the sacred Scriptures, who, after his death, according to a common ancient custom, was worshipped as “the father of the gods.”

After this brief notice of the settlement of Assyria, the word of God is silent respecting the history of that country for many centuries.

The silence of Holy Scripture, however, does not, by any means, prove the non-existence of an Assyrian empire during the earlier history of the Jewish nation, and its progenitors. For the object of the inspired records is not profane history; and, but for the connexion of Israel with other nations, no Gentile power is deemed worthy of notice in them. Such connexion did not occur until about the ninth century before the Christian era.

The national annals of Asyria, lately recovered, and still in process of being exhumed, are now read in their original autographs; and the world may expect, at no distant date, to peruse a history of that ancient nation transcribed from her own royal chronicles. Until these are published in a connected form, we must be content with the vague accounts preserved in fragments by Grecian writers.

According to them, Ninus was the first king who extended his dominion beyond the bounds of Assyria proper. He conquered Babylon, which, up to that time, had been an independent kingdom, and subjected it to his own dominions. A magnificent city, called by his own name, is reported to have been founded by him.

Ninus was succeeded by Semiramis, his widow, a great and magnanimous princess; bold, enterprising, and successful; of whom the most extravagant exploits have been narrated. After a long and martial reign, during which her arms penetrated even to Upper Egypt and Ethiopia, she left the Assyrian crown to her son Ninyas, who preferred luxurious ease and indulgence to the excitement of martial glory.

A long line of successors followed the inglorious example; they ascended the throne, lived in indolence, and died in their palaces at Ninevah.

Sardanapalus was the last of the dynasty ; the weakest, the most effeminate, the most voluptuous of the whole. His feeble character prompted Arbaces, the warlike governor of Media, to raise the standard of revolt, in which he was assisted by Belesys, a Chaldean priest, who encouraged the Babylonians to assert their independence also. These powerful provinces, aided by the Persians and other allies, attacked the empire on all sides. They were not at once successful ; but having defeated the Assyrian army, they besieged Sardanapalus in his metropolis, Nineveh, which at length fell into their hands, and thus ended the first Assyrian empire.

The account given of the end of this prince is sufficiently romantic. He relied upon an ancient oracle that Nineveh was impregnable unless the river itself became her enemy. But after the rebel armies had besieged the city for two years, the Tigris, overflowing its banks, undermined the walls for a space of twenty furlongs, which falling, left the city exposed to the enemy. The terms of the oracle were now fulfilled ; and the despairing monarch, only solicitous that his person and possessions might not fall into the hands of his infuriate foes, collected his treasures and precious things, his wives and concubines, within his palace, in which he had prepared a huge heap of combustibles. With his own hand he applied the torch to the pile, and thus perished with all that in life he had been accustomed to hold dear.

It has been remarked that an event in many respects similar to this had occurred about a century before in the history of Israel, the fame of which spreading throughout the East, may have suggested to the King of Assyria the mode of his suicide. The sacred historian thus narrates the termination of Zimri's short but bloody reign.

"And it came to pass, when Zimri saw that the city was taken, that he went into the palace of the king's house, and burnt the king's house over him with fire, and died." 1 Kings xvi. 18.

The conquest of Nineveh, and the overthrow of the Assyrian dynasty, was not the destruction of Assyria. The empire indeed was disintegrated, and the constituent provinces of Media, Babylonia, and Assyria proper, were again erected into separate kingdoms, the two latter tributary, at first, to the former, but destined soon to attain their independence. About this period the history of the Assyrian monarchy is brought into view in the Holy Scriptures, by its coming into contact with the Hebrew race.

The wickedness of the city of Nineveh, "an exceeding great city," had become flagrant, and its cry had gone up to God, when He sent his servant Jonah from Galilee to prophesy against it. According to the chronology of our English Bible this was about B.C. 862. The awful denunciation, "Yet forty days and Nineveh shall be overthrown," penetrated the palace of the monarch, and brought him to repentance, and thus averted for a while the threatened doom. As in many other cases, Jehovah hastened to show that Judgment was his strange work, and that He delighted in mercy.

"And God saw their works, that they turned from their evil way ; and God repented of the evil that He had said that he would do unto them ; and he did it not." Jonah iii. 10.

For nearly a hundred years after this event, we hear no more of Assyria ; but about the year B.C. 770, the increasing wickedness of Samaria, both king and people, provoked the Lord to stir up against his rebellious heritage the fierce conquerors on the Tigris, and to give them

a forewarning of the fate which He had in store for them, if they persevered in apostacy. It was in the reign of the cruel Menahem, that Israel first saw the face of an Assyrian invader.

"Pul the king of Assyria came against the land : and Menahem gave Pul a thousand talents of silver, that his hand might be with him, to confirm the kingdom in his hand. And Menahem exacted the money of Israel, even of all the mighty men of wealth, of each man fifty shckels of silver, to give to the king of Assyria. So the king of Assyria turned back, and stayed not there in the land." 2 Kings xv. 19, 20.

Sir Isaac Newton and Dr. Hales have conjectured that at the death of Pul his dominions were divided between his two sons ; the throne of Assyria passing to Tiglath-pileseser, and that of Babylon to Nabonassar. Dean Prideaux, on the other hand, supposes Tiglath-pileseser to be the Arbaces of the Greek writers, and Nabonassar to be Belesys. It is however agreed that these princes were contemporary, and that the famous era of Nabonassar commenced in B.C. 747.

In the sixth year of Tiglath-pileseser, the dissensions existing between Judah and Israel enabled the Assyrian monarch to interfere to the ultimate weakening of both. For though his aid was asked, and professedly given to the king of Judah, yet, as is generally the case with such interposition, we are expressly told that "the King of Assyria came unto him and distressed him, but strengthened him not." (2 Chron. xxviii. 20.)

Soon after, many of the tribes of Israel were rooted up out of their land, and carried away into a captivity from which they never returned. The tribes situated beyond the Jordan seem to have been first taken, separated as they were from their brethren, and exposed by their frontier position.

"And the God of Israel stirred up the spirit . . . . of Tiglath-pileseser, king of Assyria, and he carried them away, even the Reubenites, and the Gadites, and the half tribe of Manasseh, and brought them unto Halah, and Habor, and Hara, and to the river Gozan, unto this day." 1 Chron. v. 26.

The inhabitants of Galilee soon followed ; perhaps in another expedition ;—for

"In the days of Pekah, king of Israel, came Tiglath-pileseser, king of Assyria, and took Ijon, and Abel-beth-maachah, and Janoah, and Kedesh, and Hazor, and Gilead, and Galilee, all the land of Naphtali, and carried them captive to Assyria." 2 Kings xv. 29.

In the year B.C. 729, Tiglath-pileseser was succeeded by Shalmaneser or Enemessar. He completed the carrying away of the ten tribes, begun by his predecessor ; for, laying siege to Samaria, he took it after three years, and carried the remnant of the people into the mountains of Assyria. Shalmaneser, B.C. 715 was succeeded by the haughty blasphemer Sennacherib. The removal of the intervening tribes had laid Judah open to the assaults of Assyria, and the new monarch commenced his reign by an expedition against "all the fenced cities of Judah," which he took. (2 Kings xviii. 13.) The payment of three hundred talents of silver, and thirty talents of gold, relieved the Jewish king for the present, though to procure the sum he was compelled to exhaust the treasures of the court and of the temple, and even to strip the doors and pillars of the latter of the gold that covered them. Meanwhile the Assyrian monarch marched against Egypt, and carried on a successful campaign of three years. But the King of Ethiopia forcing him to retreat, he turned his rage against Jerusalem, and sent an immense army to summon it to surrender. The ar-

rogance and blasphemy of the repeated messages of this haughty Assyrian, the resource which the Jewish king found in prayer, the answer of Jehovah, and the overwhelming destruction of the whole invading army in one night by the miraculous interposition of God, are narrated at length in two passages of holy writ. (See 2 Kings xviii. xix.; and Isa. xxxvi. xxxvii.)

Sennacherib fled in despair and shame to Nineveh, where his cruel temper, probably exasperated by his reverses, manifested itself in the most wanton tyranny over his own subjects and slaves; till he was at length assassinated by his two sons, while worshipping "in the house of Nisroch his god," B.C. 709.\*

The two parricides having escaped into Armenia, a third son, Esarhaddon, ascended the throne. It appears that the tributary provinces took the opportunity to throw off their allegiance, which gave full employment to this monarch for many years of his long reign. His course, however, was marked by energy and success; he early recovered the revolted provinces to the west of the Euphrates, Phoenicia, Palestine, Syria, and Cilicia, and added to them Egypt and Arabia; and ultimately he made himself master of Mesopotamia, Babylonia, and Persia; Media alone maintaining its independence.† Thus this powerful prince appears to have restored the Assyrian empire to a state of splendour equal to that which it displayed in the brightest days of the more ancient dynasty.

Manassch, the profligate son of the pious Hezekiah, at this time reigned on the throne of David. Esarhaddon, after having removed the few people that yet remained in the villages of Samaria, and replaced them by foreigners, sent his captains against Judah, who took Manasseh and carried him captive to Babylon; for the Assyrian king appears to have made this city the chief seat of his residence, after he had recovered the province of Babylonia. Affliction brought the Hebrew king to true repentance, and God forgave him his sins, though of the deepest dye, and made him a monument of grace. He also caused Esarhaddon to give him a release, and to restore him to his country and to his throne.

Esarhaddon is supposed to have been succeeded by the Nabuchodonosor of the apocryphal Book of Judith. If we may receive that book as veritable history, we have an account of the overrunning and spoliation of Media first, and then the whole of Western Asia, by the troops of this monarch. Judea, however, formed an exception, and Jerusalem was saved from destruction by the courage and conduct of the heroic widow, Judith.

An impenetrable obscurity and an inextricable confusion reign over the latter periods of Assyrian history, which nothing but the testimony of its own annals will avail to remove. At length the Medes besieged Nineveh with the help of Nabopolassar, king of Babylon, who had thrown off the Assyrian yoke some years before.

And then we have a reproduction of the story of Sardanapalus. Saracus, sometimes called Chynaladan, unable to meet his enemies in the field, destitute of personal courage, and possessing an army undisciplined, debauched, and terrible only to the unresisting, is said to have shut himself up in his palace with his women and his treasures, like his predecessor, until another irruption of the Tigris threw down the wall, and a second time involved the city in ruin, when he fired his own funeral pile, B.C. 606.

The overwhelming destruction of this great city had been predicted about a century before by the prophet Nahum.

\* Clinton dates this event B.C. 11.

† See Judith.

The prophet denounces “Woe to the bloody city ;” he accuses her of being “all full of lies and robbery ;” as being constantly filled with prey. He accuses her of abominable idolatry, under the similitude of “a well-favoured harlot, the mistress of witchcrafts, that selleth nations through her whoredoms, and families through her witchcrafts.” Heavy threatenings from Jehovah are uttered, who repeatedly declares that He is “against her :” again and again it is announced that the fire shall devour her, that her chariots shall be burned in the smoke ; that the sword shall devour her “young lions ;” that, though she should make great preparations to stand a siege, drawing waters, fortifying the strongholds, and making strong the brickkilns, yet shall she be devoured ; that her crowned captains shall flee away like grasshoppers, and their place be no more known. For Jehovah will bring against her a terrible enemy, who for his power and violence is known as “the dasher in pieces,” whose chariots, furnished with flaming torches, shall rage in her streets, and justle one against another in the broad ways ; who shall take the spoil of silver, and the spoil of gold, and the pleasant and glorious furniture, of which “there is no end.” The noble river, her pride and boast, shall help her destruction ; for “the gates of the rivers shall be opened, and the palaces shall be dissolved.” Jehovah will make an utter end ; affliction shall not rise up the second time. No more of her name shall be sown ; the Lord will cut off the graven image, and the molten image ; *He will make her grave*, because she is vile. He will even cast upon her abominable filth, and make her vile, and set her as a gazing-stock.

No city in the world seemed less likely to be subject to such a doom than the great and populous Nineveh, the metropolis of the mighty Assyrian empire. Yet before a hundred years had expired, all was accomplished ; and not a jot nor a tittle of God’s word against her had failed. In Jeremiah’s time she had utterly passed away ; for that prophet, enumerating the kingdoms of the earth who were doomed to drink at God’s hand “the cup of fury,” makes no mention of Assyria, or of Nineveh ; and Ezekiel, who prophesied at the same time, gives indeed a highly poetical description of “the Assyrian,” but holds up his awful fall as a warning to other nations.

The destruction of Nineveh was absolute and sudden ; “affliction” did not, as in the case of Babylon and other cities, “rise up a second time.” Xenophon who, about B.C. 400, led the retreat of the Ten Thousand, speaks of it as a “great deserted enclosure.” Lucian, a writer in the second century of the Christian era, himself a native of a city on the Euphrates, declares that Nineveh had *utterly perished*, that there was then no vestige of it remaining, and that none knew where it had stood. Tradition had, however, indistinctly preserved a remembrance of the site ; and immense heaps of earth, scattered along the banks of the Tigris, principally on the east side, opposite the modern city of Mosul, were considered as, *with some probability*, indicating the place where once had stood the proud seat of Assyrian greatness.

But little was it suspected by the few competent to form an opinion, or able to feel any interest on the subject, whom caprice or duty led along the banks of the Tigris, that beneath these shapeless mounds lay buried the palaces and temples, the sculptures and the paintings, the monuments and the records of the ancient Assyrian monarchs, ready to be brought out in their almost primal freshness to the sunlight of our modern times, by the first European stranger who had sufficient enterprise to uncover them ! That discovery, however, has been made ; and the world has not yet reco-

vered from the surprise with which it was suddenly startled by the resuscitation, from the grave of twenty-five centuries, of the marbles of ancient Nineveh.

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### WILD FLOWERS.



WOOD-SORREL. (*Oxalis acetosella*.)

No native plant has leaves so acid as those of the Wood-sorrel. The acid resembles that of the lemon; hence the leaf is very pleasant in flavour, and is not only relished by the rambler in the woods, but is used in salads. A useful medicinal drink is also made of its juice; and a poisonous salt procured from it removes stains from linen. The plant blooms in May, and is abundant in woods and shady places. When growing on high mountains it continues in flower until August. Curtis has observed a very singular circumstance respecting its seed-vessel. He says that it continues, during the greater part of the summer, to produce seed-vessels and seeds, without any appearance of expanded blossoms, which are observable at one season only of the year. When the blossom is over, the flower-stalk bends down but becomes upright again as soon as the seed has ripened. When the seed-vessel is touched, the seeds are thrown to a great distance, not, as in some plants, by the elasticity of the seed-vessel, but by the bursting of the covering which invests the seed itself. The roots are like coral-beads strung together, and the leaves are more sensitive than those of any other of our wild flowers, closing during darkness or at the approach of a storm. They are said, by some, to show some irritability on being struck, but this statement the author has not found to be true.

The triple leaf had, in former days, some superstitious veneration attached to it, and the plant was consequently called Allelujah. Some of the early religious painters of Italy introduced it into their pictures; and the author of the work called "Modern Painters," refers to this use. He

remarks : "Fra Angelico's use of the Oxalis acetosella is as faithful in representation as touching in feeling. The triple leaf of this plant and white flower, stained purple, probably gave it strange typical interest among the Christian painters." Some persons believe that this was the Shamrock, the plant chosen by St. Patrick to illustrate the doctrine of the Trinity.

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JOHN WICKLIF, D.D.  
DIED 1384. AGED 60.



He was Professor of Theology in Oxford, and Rector of Lutterworth in Leicestershire ; but most generally known as "The Morning Star of the Reformation."

The last period of his life he spent at Lutterworth. A portion of each morning, it is said, he regularly devoted to the relief of the necessitous, to the consolation of the afflicted, and to the discharge of every pious office, by the bed of sickness and death. Everything which is actually known respecting Wicklif combines to render this account entirely credible.

The duties of the Christian ministry form the subject of a considerable portion of his writings. To the faithfulness and assiduity with which he discharged one very essential portion of those duties, the extant manuscripts of his parochial discourses bear ample and honourable testimony. "Good priests," he himself tells us, "who live well, in purity of thought, and speech, and deed, and in good example to the people, who teach the law of God, up to their knowledge, and labour fast, (*i. e.* much,) day and night, to learn it better, and teach it openly and constantly, these are very prophets of God, and holy angels of God, and the spiritual lights of the world ! Thus said God by his prophets, and Jesus Christ in his Gospel ; and saints declare it well by authority and reason."

It is surely delightful to believe that the people of Lutterworth had before their eyes the living and breathing form of that holy benevolence which is here portrayed with so much admirable simplicity and beauty.

We now proceed to describe the concluding scenes of his life. The man who for more than twenty years had made the kingdom echo with his testimony against the corruptions of the Church of Rome, was nevertheless preserved to close his immortal labours by a peaceful death.\* After his settlement at Lutterworth, his infirmities compelled him to ease the burden

\* "Admirable," says Fuller, "that a hare so often hunted, with so many packs of dogs, should die at last quietly sitting in his form."—*Church Hist.* p.42.

of his parochial duties by the assistance of a curate. To the last, however, he did not wholly discontinue his personal administrations, and it was his happiness to finish his course in the public execution of his holy office. On the twenty-ninth of December 1384, he was mortally seized with paralysis in his church. The attack was so severe as to deprive him of speech, and to render him utterly helpless. In this condition he lingered two days, and was finally taken to his rest on the last day of the year.

In 1415 an order was issued, according to which the remains of Wicklif were afterwards disinterred, and burned, and the ashes cast into the adjoining brook called the Swift. "But though they digged up his body, burned his bones, and drowned his ashes, yet the Word of God and truth of his doctrine, with the truth and success thereof, they could not burn, which yet to this day, for the most part of his articles, do remain." "The brook," says Fuller, "did convey his ashes into Avon, Avon into Severn, Severn into the narrow seas, they into the main ocean. And thus the ashes of Wicklif are the emblems of his doctrine, which now is dispersed all the world over."

In his work named "The Poor Caitiff," Dr. John Wicklif thus writes on the Resurrection :—"All mankind shall rise at the day of doom, from death to life, in body and soul together, each in his own kind, and in his own body, incorruptible and immortal. And though the body were burned with fire, and the powder thereof thrown into the four seas that go about the world, yet the soul and it shall come together again, and rise from death to life at the dreadful doom, and from that day forward never after depart. And they that have evil lived, and ended in deadly sin, shall go in body and soul to pain for evermore; and they that have lived well and kept the commands of God, and fulfilled the deeds of mercy after their power, and ended in charity to God and man, shall go, body and soul together, to bliss for evermore."

#### THE MINISTRY OF ANGELS.

AND is therō care in heaven? And is there love  
In heavenly spirits to these creatures base,  
That may compassion of their evils move?  
There is: else much more wretched were the case  
Of men than beasts. But O! th' exceeding grace  
Of Highest God, that loves his creatures so,  
And all his works with mercy doth embrace,  
That blessed angels he sends to and fro,  
To serve to wicked man, to serve his wicked foe!

How oft do they their silver bowers leave,  
To come to succour us that succour want!  
How oft do they with golden pinions cleave  
The fitting skies, like flying pursuivant  
Against foul fiends to aid us militant!  
They for us fight, they watch and duly ward,  
And their bright squadrons round about us plant;  
And all for love and nothing for reward:  
O, why should Heavenly God to men have such regard!

SPENSER.

## HALOS.



IN certain states of the atmosphere, chiefly occurring in Polar regions, the sun and moon are surrounded with circles and parts of circles of various sizes and forms, producing the most singular and remarkable effects. All these appearances are called *halos*. The small halo seen round the sun and moon in fine weather, when the sky is partially covered with light fleecy clouds, are also called *corona*. Sometimes the image of the sun or moon is repeated several times, producing what are called *parhelia* or mock-suns, and *paraselenæ* or mock-moons. Small halos surrounding the planet Venus have been observed near the Equator. The colours of the solar halo are similar to those of the rainbow, but not so bright, and they do not always occur in the same order. In the halo the red is generally nearest the sun, the exterior of the band being a pale indigo or violet, and in some cases white. Occasionally the inner edge is white, and beyond this are green, yellow, and a pale red. The lunar halo is usually white, but occasionally shows tints of pale green or red. Both the solar and the lunar halo often appear double, consisting of two concentric circular bands; the outer one being broader than the other, its colours fainter, and its distance from the sun or moon twice as great as that of the inner band. The sky within the halos is sometimes of a deep blue colour; but it is frequently gray, on account of a thin veil of clouds covering it.

*Coronæ* are much smaller than *halos*. A *corona* sometimes appears in company with a *halo*, but such is not often the case. The solar *corona* commonly consists of three concentric bands, variously coloured: in one observed by Sir Isaac Newton, by reflection in a vessel of standing water, the colours of the three bands proceeding from the sun outwards were blue, white, and red; purple, blue, green, and pale red; pale blue and red.

Mock-suns, or *parhelia*, are of common occurrence within the Arctic

Circle. Their usual appearance has been thus described:—"When the sun is not far from the horizon, one or more luminous circles or halos surround it at a considerable distance; two beams of light go across the innermost circle, passing through the centre of the sun, the one horizontally, the other perpendicularly, so as to form a cross; where these beams touch the circle, the light is, as it were, concentrated in a bright spot, sometimes scarcely inferior in brilliance to the sun itself; at the corresponding points in the outermost circle, segments of other circles, wholly external, come into contact with it."

A beautiful exhibition of parhelia, which occurred in the northern parts of America, has been thus described:—The atmosphere had been very hazy, but as the haziness cleared off, the first appearance was a brilliant parhelion. "Its form at first was nearly circular, and its apparent diameter a little greater than that of the true sun. Its light, which was of a brilliant white, was so intense as to pain the eyes. In a few moments, another parhelion, of equal brightness, appeared at the same distance on the east side of the sun, and at the same altitude. When first seen it appeared a little elongated vertically, and slightly coloured. Both these parhelia retained their size and appearance for a few moments, and then began to lengthen in a vertical direction, and show the prismatic colours with considerable brilliancy. Directly above the sun appeared, at the same time with the parhelia, a coloured arc, having its centre in the zenith, and its convexity towards the sun. The exterior was red; the other colours were merged into each other, but the blue and green were predominant, though faint.

Paraselenæ are frequently seen in the Polar regions. Captain Parry noticed several of them during the long winter nights of those dreary abodes. On the 1st December, 1819, he remarked one close to the horizon, another perpendicularly above it, and two others on a line parallel to the horizon. "Their shape was like that of a comet, the tail being from the moon. The side towards the moon was of light orange-colour. During the existence of these Mock-moons, a halo or luminous ring appeared round the moon, and passed through all the mock-moons, at which instant two yellowish-coloured lines joined the opposite mock-moons, and formed four quadrants, bisecting each other at the centre of the circle. These appearances varied in brightness, and continued above an hour." On another occasion a circular halo surrounded the moon: part of a well-defined circle of white light passed through the moon, extended for several degrees on each side of her, and in points where this circle intersected the halo were paraselenæ. In the part of the halo immediately over the moon was another much brighter, and opposite to it in the lower part of the circle another similar but much more faint. About the same time on the following evening two concentric circles were observed round the moon, upon the inner of which were four paraselenæ, exhibiting the colours of the rainbow. On another evening he saw a halo, which had in it three paraselenæ, very luminous, but not tinged with prismatic colours; and on the following day the same phenomena occurred with the addition of a vertical stripe of white light proceeding from the upper and lower limbs of the moon, and forming, with a part of the horizontal circle seen before, the appearance of a cross. There was also at times an arc of another circle touching the halo, which sometimes almost reached to the zenith, changing the intensity of its light, very frequently not unlike the Aurora Borealis.

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ASSYRIA—NINEVEH.



THE MOUND OF KHORSABAD.

HISTORY.

Of the mounds which appear to be identified with ancient Nineveh, the principal are Kouyunjik, and Nebbi-Yunus, or the so-called Tomb of Jonah, on the east bank of the Tigris, opposite Mosul ; Nimroud, about eighteen miles lower down the river, near the junction of the Greater Zab ; Karasules, about twelve miles north of Nimroud ; and Khorsabad, nearly the same distance north of Kouyunjik. These points form the four corners of a rhomboid, the circumference of which is sixty miles, the

dimensions assigned to the ancient city "of three days' journey." Over this inclosed area are scattered many subordinate mounds, and the whole country is strewn with bricks, pottery, and other fragments of antiquity. On the opposite bank of the river, about forty miles below Nimroud, is another immense shapeless heap, clothed with grass, and called Kalah Sherghat. This is supposed by some to be the ruins of Calah (Gen. x. 11), one of the primeval sister cities of Nineveh.

The first monuments of importance were obtained at Khorsabad, in the year 1844, by M. Botta, the French Consul at Mosul. Excavating in the mound so called, he uncovered a chamber, surrounded by slabs of alabaster, on which were sculptured in relief, battles, sieges, processions, and other scenes; with numerous inscriptions in the arrow-headed character. It was evident that the palace of which this was a part had been subjected to the action of fire, for the slabs were completely calcined, and could scarcely be preserved sufficiently to allow the scenes and inscriptions to be copied, before they mouldered into dust.

In other chambers, however, the slabs were sufficiently perfect to be removed; and the sculptures in many cases yet retained the colours with which they had been painted. Colossal statues of winged human-headed bulls, painted bricks, fragments of copper, and considerable quantities of charcoal, were also found.

In the autumn of 1845, our countryman, Mr. Layard, commenced excavating the great mound of Nimroud, the angle of the rhomboid most remote from Khorsabad. He, too, was rewarded by monuments similar in character to those already found, but distinguished by greater majesty and simplicity of design, a severer style of execution, and peculiarities of costume, which indicated a considerable difference in the age of the two palaces which had been uncovered. The details of these discoveries, full of the highest interest, are recorded by the learned archaeologist himself in his "*Nineveh and its Remains*," a work which needs no recommendation of ours; and the sculptured scenes have been faithfully copied and published in a magnificent volume, "*The Monuments of Nineveh*"; while those obtained by M. Botta have been laid before the world in similar style in a work of five volumes, entitled "*Monument de Ninive*." Very many of the sculptures themselves and other remains are preserved in the Louvre at Paris, and in the British Museum.

The principal monuments discovered at Nimroud were from a palace near the north-west corner of the mound, but there was another palace at the south-west corner, one at the south-east, and one in the centre, besides chambers in other parts. The north-west and central palaces were the most ancient, having been laid in ruins before the others were erected: that at the south-west being built chiefly of slabs taken from these. The south-east corner was occupied by tombs, beneath which were the remains of a ruined palace.

From various deductions drawn from the condition of the ruined palaces, the sculptures contained in them, and the numerous genealogical and other inscriptions which have been partially read, it is ascertained indubitably that the north-west and central palaces of Nimroud are the most ancient relics of Assyria yet discovered; that a very long interval lies between their era and that of Khorsabad and Koyunjik, which were the palaces of a father and son; and it seems pretty certain that the south-west edifice was considerably later than these. The north-west and central palaces had not been subjected to the action of fire, but the south-west palace of

the mound, as well as Khorsabad and Kouyunjik, had evidently been destroyed by conflagration. The south-west palace is supposed by Mr. Fergusson to have been the scene of the suicide of Saracus, the last king of Nineveh: and he suggests that the funeral pyre was erected in front of the southern entrance, which Mr. Layard found almost blocked up by charcoal.

"The earliest records," observes Colonel Rawlinson, "that have been yet brought to light, written in the cuneiform character, are certainly the inscriptions of the north-west palace of Nimrud; these belong to a king, whose name I have read as Assar-adanpal, and whom I am inclined to identify with the Sardanapalus of the Greeks; not the voluptuary of historical romance, but the warlike Sardanapalus of Callisthenes, whose place of sepulture, marked by an enormous tumulus, Amynthas, an ancient Greek author, quoted by Athenaeus, notices at the gate of the Assyrian capital.

"But although this Sardanapalus, the builder of the north-west palace of Nimrud, is the earliest Assyrian monarch whose annals have been yet discovered, it does not by any means follow that he was the first founder of the city of Halah, still less that he was the first great builder of Assyria, or the first king who ruled over the land. On the contrary, it is an ascertained fact, that Sardanapalus did not stand nearly at the head of his line.

"Sardanapalus, indeed, in every one of his inscriptions names both his father and his grandfather, and applies to each of them the title of 'King of Assyria.' In commemorating, moreover, the building of the palace at Nimrud, he speaks of a still earlier king, Temen-bar I., who was the original founder of the City of Halah."

The central palace was built by Temen-bar II., the son and successor of Sardanapalus; of whose annals, through a reign of thirty years, a detailed record is preserved on an obelisk of black basalt, now in the British Museum. This record has been translated by Col. Rawlinson.

Two other monarchs, Shemir-hem (Semiramis?) and Hevenk (Evechius) II., terminate the royal line of Sardanapalus; and an interval of unknown length succeeded before the commencement of the next known dynasty, headed by the builder of Khorsabad. The identification of this king and his successors, involves a question of so much interest, that we shall quote at considerable length the details of its examination.

As early as June 25th 1849, the Rev. Edward Hincks, D.D., read before the Royal Irish Academy an elaborate paper "On the Khorsabad Inscriptions," in which he identified the builder of the Kouyunjik palace with Sennacherib (San-ki-rib); and the builder of the south-west edifice at Nimroud with Esar-haddon (Arthur-ka-than) his son. The name of the Khorsabad king, the father of the former, he read as Kinilin, which he attempted to identify with the Chinziros of Ptolemy's canon, who, conjointly with Porus, reigned over Babylon, and whom Dr. Hincks supposed to be the Tiglath-pileser of the sacred records.

These identifications Col. Rawlinson criticised in his "Commentary on the Cuneiform Inscriptions," read before the Royal Asiatic Society on the 19th of January and the 16th of February 1850; in which he thus summed up the evidence for the identity of the former two kings with Esar-haddon and Sennacherib, and that of the last with Shalmaneser.

"The impression appears to be pretty general, that whatever may be the antiquity allowed to the Nimrud series of kings, the line commencing

with the builder of Khorsabad must, at any rate, represent what is usually termed the lower dynasty of Assyria, that is, the monarchs mentioned in Scripture, who were contemporary with the kings of Israel and Judah. Now in a question of this sort, with the limited and intractable materials that are alone available to our research, certainty is impossible. Positiveness must of itself create suspicion, for it is a proof that the subject cannot have been thoroughly investigated. I would not pretend, for my own part, to pronounce authoritatively, that the kings of the lower or restored dynasty of Assyria were, or were not, the royal line mentioned in Scripture. My opinion at present is, I confess, against the identification, but the evidence is pretty nearly balanced ; and if the great difficulty, the dissimilarity of names, were removed, I might possibly become a convert to the belief that in the three kings, who built the palace of Khorsabad, who founded Mes-pila, and who constructed the lions in the south-west palace of Nimrud, we had the Biblical Shalmaneser, Sennacherib, and Esar-haddon.

"Firstly, then, with regard to Shalmaneser. The Sargon of Isaiah, who sent his general, Tartan, against Ashdod, at the commencement, apparently of the reign of Hoshea, king of Israel, is almost certainly the same king who is usually named Shalmaneser ; it may be supposed, therefore, that the king bore these two names indifferently. As a further argument, also, that the popular name of the Khorsabad king was really Sargon, I must repeat the observation which I have already made in treating of the nomenclature of the ruins ; namely, that the city excavated by M. Botta is stated in the inscriptions to have borne the same name as its founder, and that as late as the Arab conquest the site of Khorsabad actually retained, in the country, the old Syrian title of Sargun.

"This similarity of name, however, is perhaps the least striking of the coincidences between the Khorsabad king and the Shalmaneser of history. Shalmaneser we know attacked Hoshea, because he was in communication with Sabaco, King of Egypt. We further learn from Josephus, that Shalmaneser sent a force to Cyprus to assist the islanders against Tyre ; and it is thus highly interesting to find that an inscription which has lately been discovered in the island of Cyprus, and which appears to commemorate the liberation of the islanders, belongs to the king of Assyria, who is known as the builder of Khorsabad. An expedition against Ashdod is described at Khorsabad, which may very well be that noticed in Isaiah, and the king always names Ashdod among his tributary cities, whilst Tyre and Sidon are excluded from the list, in accordance, apparently, with the testimony of Menander, that Tyre successfully resisted Shalmaneser's five years' siege.

"I now go on to the next king, the builder of the great palace of Koyunjik, and the son of the king at Khorsabad, whose actions, it must be admitted, have a good deal of resemblance to those of Sargon or Shalmaneser. Of course if the father be Shalmaneser the son will be Sennacherib, and it has been lately stated by a scholar, Dr. Hincks, who has made considerable progress in deciphering the Assyrian inscriptions, that the cuneiform orthography actually gives that name,

"It would seem highly probable that it was upon the same expedition into Phoenicia that the triumphal tablet was engraved at the Nahar el Kalb ; and as the Assyrian monarch has there apparently retorted upon Egypt the boast of foreign conquest, the circumstances would seem particularly applicable to the great expedition of Sennacherib, which is alluded to both

in Holy Writ and by Herodotus, and in which Josephus states that the Assyrian king not only took Ashdod and ~~Pelusium~~, but also ravaged Lower Egypt.

“ Of the son of this king very little indeed is known from the inscriptions ; but the first two elements of his name are identical with those that occur in the name of Sardanapalus, and thus read, according to my phonetic system, Assar-adan, which represents as nearly as possible the Esar-haddon of Scripture.

“ These are the immediate points connected with the inscriptions of the Khorsabad dynasty, which seem to me to be favourable to the identification of the line with the Scriptural kings, Shalmaneser, Sennacherib, and Esar-haddon. The general position which would also lead to the same conclusion, and which of course is that usually put forward, is, that monarchs of such power as those who overran Palestine, and carried the Ten Tribes into captivity, must needs, in a country where sculptured slabs and votive bulls appear to have answered the same purpose as our modern gazettes and bulletins, have left some memorials of their sway,—while, if any such memorials do exist amongst the relics that have lately been disinterred, the inscriptions of Khorsabad and Koyunjik are those alone which will answer.”

We need not now quote any arguments against these identifications ; for their correctness has been established beyond all doubt ; and Col. Rawlinson himself has announced the discovery of facts of the very highest interest ; no less in short than the original records by the Assyrian kings of their relations with the kingdoms of Israel and Judah, with which we have been familiar in the inspired Word of God.

“ I have succeeded,” writes this gentleman, “ in determinately identifying the Assyrian kings of the lower dynasty, whose palaces have been recently excavated in the vicinity of Mosul :—and I have obtained from the annals of those kings contemporary notices of events which agree in the most remarkable way with the statements preserved in sacred and profane history.

“ The king who built the palace of Khorsabad, excavated by the French, is named *Sarginia*, the Sargon of Isaiah : but he also bears, in some of the inscriptions, the epithet of Shalmaneser, by which title he was better known to the Jews. In the first year of his reign he came up against the city of Samaria and the tribes of the country of *Beth Homri* (or ‘Omri, being the name of the founder of Samaria, 1 Kings xvi. 16, *et seq.*, &c.). He carried off into captivity in Assyria 27,280 families, and settled in their places colonists brought from Babylonia :—appointing prefects to administer the country, and imposing the same tribute which had been paid to former kings. The only tablet at Khorsabad which exhibits this conquest in any detail (Plate 70) is unfortunately much mutilated.

“ In the second year of Shalmaneser’s reign, he subjugated the kings of *Libna* (?) and *Khazita*, who were dependent upon Egypt ; and in the seventh year of his reign he receiveth tribute direct from the king of that country who is named *Pirhu*, probably for ‘ Pharaoh,’ the title by which the kings of Egypt were known to the Jews and other Sémitic nations. This punishment of the Egyptians by Sargon or Shalmaneser is alluded to in the 20th chapter of Isaiah.

“ Among the other exploits of Shalmaneser found in his annals, are,—the conquest of Ashdod, also alluded to in Isaiah xx. 1,—and his reduction of the neighbouring city of *Jumnai*, called *Jabneh* or *Jamneh* in the Bible, *Jamnaan* in Judith.

"I am not sure how long Shalmaneser reigned, or whether he made a second expedition into Palestine. His annals at Khorsabad extend only to the fifteenth year; and although the names are given of numerous cities which he captured in Cœlo-Syria and on the Euphrates—such as Hamath, Beræa, Damascus, Bambryce, and Carchemish,—I am unable to trace his steps into Judea Proper. On a tablet, however, which he set up towards the close of his reign in the Palace of the first Sardanapalus at Nimrud, he styles himself 'conqueror of the remote Judæa'; and I rather think, therefore, that the expedition in which, after a three years' siege of Samaria, he carried off the great body of the tribes of Israel, and which is commemorated in the Bible as having been concluded in the sixth year of Hezekiah, must have taken place subsequently to the building of the palace of Khorsabad.

"Without this explanation, indeed, we shall be embarrassed about dates:—for I shall presently show that we have a distinct notice of Sennacherib's attack upon Jerusalem in the third year of that king's reign, and we are thus able to determine an interval of eighteen years at least to have elapsed between the last-named event and the Samaritan campaign; whereas in the Bible we find the great captivity to date from the sixth year of Hezekiah, and the invasion of Sennacherib from the fourteenth.

"I now go on to the annals of Sennacherib. This is the king who built the great Palace of Koyunjik, which M. Layard has been recently excavating. He was the son of Sargina or Shalmaneser; and his name, expressed entirely by monograms, may have been pronounced *Sennachiriba*. The events, at any rate, of his reign place beyond the reach of dispute his historic identity. He commenced his career by subjugating the Babylonians under their king Merodach-Baladan, who had also been the antagonist of his father:—two important points of agreement being thus obtained both with Scripture and with the account of Polyhistor. The annals of the third year, however, of the reign of Sennacherib, which I have just deciphered after the copy of an inscription taken by Mr. Layard from one of the bulls at the grand entrance of the Koyunjik Palace, contain those striking points of coincidence which first attracted my attention,—and which being once recognised, have naturally led to the complete unfolding of all this period of history. In his third year, Sennacherib undertook, in the first instance, an expedition against *Luliya*, king of Sidon, in which he was completely successful. He was afterwards engaged in operations against some other cities of Syria, which I have not yet identified,—and whilst so employed learned of an insurrection in Palestine. The inhabitants, indeed, of that country had risen against their king *Padiyu*, and the officers who had been placed in authority over them, on the part of the Assyrian monarch,—and had driven them out of the province, obliging them to take refuge with Hezekiah, king of Jerusalem, the capital city of Judæa.

The rebels then sent for assistance to the kings of Egypt; and a large army of horse and foot marched to their assistance, under the command of the king of Pelusium (?) Sennacherib at once proceeded to meet this army; and fighting an action with them in the vicinity of the city of *Allaku*, (?) completely defeated them. He made many prisoners also,—whom he executed, or otherwise disposed of. Padiya then returned from Jerusalem, and was re-instated in his government. In the mean time, however, a quarrel arose between Sennacherib and Hezekiah on the subject of tribute. Sennacherib ravaged the open country, taking 'all the fenced

cities of Judah,' and at last threatened Jerusalem. Hezekiah then made his submission, and tendered to the king of Assyria, as tribute, 30 talents of gold, 300 talents of silver, the ornaments of the Temple, slaves, boys and girls and men-servants and maid-servants for the use of the palace. All these things Sennacherib received :—after which he detached a portion of Hezekiah's villages, and placed them in dependence on the cities which had been faithful to him,—such as *Hebron*, *Ascalon*, and *Cadytis*. He then retired to Assyria.

" Now, this is evidently the campaign which is alluded to in Scripture (2 Kings xviii. 13—17). The agreement at any rate, between the record of the Sacred Historian and the contemporary chronicle of Sennacherib, which I have here copied, extends even to the number of the talents of gold and silver which was given as tribute.

" The only copy which has been yet found of Sennacherib's annals at Koyunjik is very imperfect, and extends only to the seventh year.

" I will only further mention that we have upon a cylinder in the British Museum a tolerably perfect copy of the annals of Esar-haddon, the son of Sennacherib, in which we find a further deportation of Israelites from Palestine, and a further settlement of Babylonian colonists in their place :—an explanation being thus obtained of the passage of Ezra (iv. 2) in which the Samaritans speak of Esar-haddon, as the king by whom they had been transplanted.

" Many of the drawings and inscriptions which have been recently brought by Mr. Layard from Nineveh refer to the son of Esar-haddon, who warred extensively in Susiana, Babylonia, and Armenia; though as his arms never penetrated to the westward, he has been unnoticed in Scripture history : and under the son of this king, who is named Saracus or Sardanapalus by the Greeks, Nineveh seems to have been destroyed.

" One of the most interesting matters connected with this discovery of the identity of the Assyrian kings is, the prospect, amounting almost to a certainty, that we must have, in the bas-reliefs of Khorsabad and Koyunjik, representations from the chisels of contemporary artists, not only of Samaria, but of that Jerusalem which contained the Temple of Solomon. I have already identified the Samaritans among the groups of captives portrayed upon the marbles of Khorsabad ; and when I shall have accurately learnt the locality of the different bas-reliefs that have been brought from Koyunjik, I do not doubt but that I shall be able to point out the bands of Jewish maidens' who were delivered to Sennacherib, and perhaps to distinguish the portraiture of the humbled Hezekiah."

#### AN EPITAPH.

Said to be written by Sir WALTER RALEIGH, the night before his Execution.

Ev'n such is Time, which takes on trust,  
Our youth and joys, and all we have,  
And pays us but with age and dust,  
Which in the dark and silent grave,  
When we have wander'd all our ways,  
Shuts up the story of our days ;  
And from which earth, and grave and dust,  
The Lord shall raise me up, I trust.

## WILD FLOWERS.

WOODY NIGHTSHADE, OR BITTER SWEET. (*Solanum dulcamara*.)

THE lurid purple blossoms of this plant would lead the botanist to infer, at the first glance, that poison lurked there. The scarlet berries which in the latter part of summer deck the branches, and which in winter hang in glistening clusters among withered boughs and leaves, are well known to be poisonous, and to prove sometimes fatal to children, who are tempted by their beauty to taste these fruits. In cases where this occurs, warm water should be given in great quantities, until medical aid arrives. The roots of this Nightshade are in scent like the potatoe, and its familiar name originates in their flavour, which is at first bitter in the mouth, and afterwards sweet. The similarity in their blossoms also points out the affinity between this plant and the potatoe. This valuable root belongs to another species of the same genus (*Solanum tuberosum*), and its connection with the poisonous family of the Nightshades, made Linnaeus long mistrustful of its wholesome qualities. The berries, the leaves, and even the uncooked tubers of the potatoe possess indeed, in a milder form, the narcotic properties of this tribe; but the heat that prepares the vegetable for our table, wholly removes any unwholesome principle.

The twigs and stalks of the Bitter Sweet are used by the Swedish peasants to bind around their wooden cans, and the inhabitants of Westphalia make a decoction of the whole plant, and use it as a remedy for rheumatism. This species is common throughout Europe, and also in many parts of Asia and North America. Most cattle refuse its foliage, but the goat relishes it.

There is a kind of Nightshade very frequent as a weed in our gardens, on sea-beeches, and in other waste places, with white flowers shaped like those of the engraving, which are succeeded by blackberries. This is the Garden Nightshade (*Solanum nigrum*). The berries are, by us, considered a virulent poison; but Backhouse mentions that the people of Norfolk Island eat them, though he observes that the climate probably alters their properties. The Deadly Nightshade is a differently formed flower from either of these, and is a purple bell. It is the *Atropa Belladonna* of the botanist. It bears black berries.

## THE EAGLE.



STERN and unsociable in their character, yet confident in their great strength, and efficient means of defence, the Eagles delight to dwell in the solitude of inaccessible rocks, on whose summits they build their rude nest, and sit in lone majesty, while with their keen and piercing eye they sweep the plains below, even to the horizon. Hence, bold and fearless, they sally forth; and, swooping from their towering height, bear their paralysed victim aloft in their powerful talons. Being the largest of the rapacious birds, and possessing a courage and ferocity answering to their size, they disdain the small booty of other falcons, and select such prey as lambs, fawns, or calves, and even the fox and the dog. Records exist of children, of four or five years old, having been snatched away by them, which seem too circumstantial to be denied. These feats are chiefly ascribed to the Golden Eagle of our own country, and indeed of the whole northern hemisphere.

The Fisher Eagles are scarcely if at all inferior to these in size and strength; and though their appetite inclines them to feed chiefly upon fishes, yet this diet is occasionally varied with more solid animal food. The large and interesting bird which the Americans have chosen as the emblem of their young and vigorous republic, the White-headed, or, as it is usually called by them, the Bald Eagle, is a fair specimen of the genus. Its

oppressive abuse of superior might in robbing its weaker but more industrious relative, the Fish-hawk, of the fish which he has caught, are beautifully and even sublimely sketched by Wilson, in a passage which can never be too often quoted:—"In procuring" his prey "he displays in a very singular manner the genius and energy of his character, which is fierce, contemplative, daring, and tyrannical; attributes not exerted but on particular occasions; but, when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree, that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below; the snow-white Gulls slowly winnowing the air; the busy *Tringæ* coursing along the sands; trains of Ducks streaming over the surface; silent and watchful Cranes, intent and wading; clamorous Crows; and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these hovers one, whose action instantly arrests his whole attention. By his wide curvature of wing, and sudden suspension in air, he knows him to be the Fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight, and balancing himself with half-opened wings on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around! At this moment the eager looks of the Eagle are all ardour; and levelling his neck for flight, he sees the Fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, and soon gains on the Fish-hawk; each exerts his utmost to mount above the other; displaying in these rencontres the most elegant and sublime aerial evolutions. The unencumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish; the Eagle, poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods."\*

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#### ON VALUE (*continued*).

ON these elementary points such questions as the following may be usefully put to themselves by those to whom the subject is new:—

1. Why is air not an article of value?—Because, though it be very useful, it is to be had for nothing.

2. Why is some scarce kind of stone, that is of no use or beauty, not an article of value?—Because, though it be not a thing that every one can get, no one desires to get it.

3. Why is a healthy constitution not an article of value?—Because, though it be very desirable, and is not what every one can get, it is not transferable; that is, cannot be transferred or parted with by one person to another.

4. Why is a spade an article of value?—Because it has the three qualities which must be combined to make any thing an article of value, that is, it is, 1st, desirable, as being of use; 2ndly, limited in supply—that is, it is not what every one can have for nothing; and 3rdly, transferable—that is, one person can part with it to another.

\* Amer. Ornith. vol. i. p. 23. (Constable's edition.)

5. Why is a silver spoon of more value than a spade?—Because, though it be not more useful, it is more limited in supply, or harder to be got, on account of the difficulty of working the mines of silver.

When any thing that is desirable is to be had by labour, and is not to be had without labour, of course we find men labouring to obtain it; and things that are of very great value will usually be found to have cost very great labour. This has led some persons to suppose that it is the labour which has been bestowed on any thing that *gives* it value; but this is quite a mistake. It is not the labour which any thing has cost that causes it to sell for a higher price; but, on the contrary, it is its selling for a higher price that causes men to labour in procuring it. For instance, fishermen go out to sea, and toil hard in the wet and cold to catch fish, because they can get a good price for them; but if a fisherman should work hard all night and catch but one small fish, while another had perhaps caught a thousand, by falling in with a shoal, the first would not be able to sell his one fish for the same price as the other man's thousand, though it would have cost him the same labour. It has now and then happened that a salmon has leaped into a boat by chance; but though this has cost no labour, it is not for that reason the less valuable. And if a man, in eating an oyster, should chance to meet with a fine pearl, it would not sell for less than if he had been diving for it all day.

It is not, therefore, labour that makes things valuable, but their being valuable that makes them worth labouring for. And God having judged in his wisdom that it is not good for man to be idle, has so appointed things by his Providence, that few of the things that are most desirable can be obtained without labour. It is ordained for man to eat bread in the sweat of his face; and almost all the necessities, comforts, and luxuries of life, are obtained by labour.

You will perceive, however, from what has been said, that the value of any article depends, not on the amount of labour which that particular article actually *has* cost, but on that which such articles *usually* cost, and may be expected *hereafter* to cost. The limitation in supply which affects the value, has reference to the *present and future*, and not to the *past*. When, therefore, any one tells you that such and such an article sells for so much, and cannot be afforded cheaper because it has cost such and such an amount of labour,—or of money, which is the price of labour,—what he really means is, that this is what it must be *expected* to cost hereafter, and that the limitation in supply remains the same as it was. For otherwise the price of the article already produced may rise or fall.

For instance, the corn which is now in the granaries has actually cost a certain amount of labour; but if there were to be a great failure of the next harvest, the value of the corn now in store would be very much raised; and, on the other hand, if the next harvest should yield three times as much as the last, there would be a great fall in the price of corn, old and new alike, though each bushel of the old corn had actually cost as much labour as three bushels of the new.

So, also, when the American silver and gold mines were discovered, which yielded much more than those of the old world, all the silver and gold that were already in circulation sunk very much in value. And again; if all the richest mines in the world were now suddenly to fail, the silver and gold now in circulation would rise greatly in value; because the value of it depends, not on what it actually *has* cost to procure it, but what it *would* cost to procure more.

## THE AURORA BOREALIS.



"THE heavens declare the glory of God" (Ps. xix. 1): yet the more familiar appearances of the sky, beautiful as they are, scarcely awaken our attention, or lead our thoughts towards their Great Author. But when such a spectacle as that presented by the Aurora Borealis first breaks upon the sight, the most indifferent person must be led to reflect upon the wonder-working power of the Divine Hand.

The name given to this phenomenon signifies Northern Daybreak, and is very appropriate, because the Aurora usually appears in the North, and gives a light not unlike that of the dawn of day. It is sometimes seen in this country; but it is seldom brighter here than the light of a subdued twilight. In the regions of the north, and also at rare intervals in this country, it assumes a much more magnificent appearance, and presents a variety of majestic forms. Sometimes, from a focus of light there proceeds a multitude of bright and quivering beams, shooting upwards with great rapidity, and yielding a silvery radiance like that of the moon. Frequently a larger arch of light appears, accompanied at the same time by other smaller arches: these move rapidly towards each other and suddenly unite in one splendid mass of radiance; or, perhaps, one majestic slow-moving arch, of great beauty and effulgence, will suddenly break into countless masses of light, or into numerous smaller arches. Sometimes these arches are brightest towards their centres, at others they are most brilliant at their extremities.

The light of the Aurora is generally white and silvery, but occasionally it presents the beautiful colouring of the rainbow. In high northern latitudes it is mostly white, steel-grey, or pale yellow; but when the sky is clear, or only thin films of cloud are visible, the colours are vivid and prismatic. In Baffin's Bay the Aurora has been observed distinctly of red, orange, yellow, and green colours. In the north-east of Siberia it is particularly luminous, clothing the sky with a radiance resembling that of

gold, rubies, and sapphires. In Hudson's Bay the light of the Aurora is frequently equal to that of the full-moon; while in Lapland and Sweden the light is still more brilliant and nearly constant. In this beautiful phenomenon, therefore, the inhabitants of polar regions find a compensation for many of the discomforts and inconveniences of their dreary situation. Even in the Shetland Isles the Aurora is a frequent and welcome visitor. Under the title of "merry dancers," the inhabitants hail its appearance as giving beauty and cheerfulness to their long winter nights. It appears soon after the commencement of evening twilight, rising just above the horizon, without particular motion or effulgence, but after a time breaking forth into streams of brilliant light, and assuming every possible variety of form and colour. The stars are visible through the streamers of the Aurora, and they are not greatly dimmed in their lustre, unless the light is of remarkable brilliancy.

A very remarkable circumstance connected with the Aurora is, that, although it seems to be very high in the air, perhaps higher than our common clouds, there are yet proofs that it is connected with the atmosphere, and often descends so low, that at times it appears to touch the earth itself. Such seems to have been the case with a splendid Aurora witnessed by Captain Parry while wintering at Port Bowen, in the Arctic regions. About midnight, on the 27th of January, the Aurora broke out in a single compact mass of brilliant yellow light, appearing only a short distance above the land. This light, though very bright at all times, varied almost constantly in intensity, and had the appearance of being produced by one volume of light overlaying another, just as we see the darkness and density of smoke increased by cloud rolling over cloud. While Captain Parry and two of his lieutenants were admiring the extreme beauty of this phenomenon, they were all surprised to see a bright ray of the Aurora shoot suddenly downwards from the general mass of light, and between them and the land, which was then distant only three thousand yards.

Several observers in the last century say that this phenomenon was accompanied by noises which have been variously described as hissing, whizzing, crashing, and crackling: one says that it was like the noise of a rushing wind; another describes it as a quick whispering noise. It is also said that when the phenomenon was accompanied by a loud hissing or crackling noise, the dogs of the fur-hunters on the confines of the icy sea would lie close to the ground, and refuse to move until the noise had passed over. Modern observers, however, have been unable to detect any sound whatever accompanying the Aurora. Captain Lyon says, that the sudden glare and rapid bursts of these wondrous showers of fire make it difficult to fancy their movements to be wholly without sound; but he declares that he stood for hours on the ice listening, and at a distance from every sounding body, till he became thoroughly satisfied that none proceeded from the Aurora. Captain Parry makes a similar remark; but he complains that he could not expose his ears to the cold long enough completely to ascertain the point. Professor Hansteen remarks, that, "unfortunately, since the beginning of this century, we live in one of the great pauses of this phenomenon, so that the present generation know but little of it from personal observation. It would, therefore, be very agreeable to receive from older people observations of this kind made in their youth, when the Aurora Borealis showed itself in full splendour."

The cause of the Aurora has not been satisfactorily explained. It is, however, usually attributed to electricity, which, in its passage from the

north pole to the equator, is supposed to become visible in this form. The beautiful imitation of the streamers of the Aurora, which can be obtained from the electrical machine, seems to favour this view; yet it is remarkable that the magnetic needle has never been visibly affected by the Aurora, even in those countries where the phenomenon is the most splendid. This is still, therefore, one of those wonderful displays of Divine power which we must admire, without being able, in the present state of our knowledge, to explain or understand. The Aurora has also been seen in high southern latitudes, in which situation it is called *Aurora Australis*, or Southern Daybreak.

## ETHEL BULKELEY.



"You have heard of the two sad accidents that occurred during the storm last evening, I suppose?" said Mr. Spencer, to a lady whom he was attending professionally.

"To what do you allude?" asked Mrs. Bulkeley. "I am not aware of any accident."

"I am surprised at that," replied he; "poor Jackson, at whose bedside you and I so often met last winter, was killed as he was driving the cows into the yard to be milked; and the driver of the Express was either struck by the lightning, or had a fit, for he fell from the box suddenly, and the wheel going over his head he was taken up dead."

"How very sorry I am to hear it!" said Mrs. Bulkeley.

"And so am I," returned Mr. Spencer; "very sorry; for both were married men; and Jackson, as we well know, has a large family."

The news of Jackson's melancholy death soon spread throughout the family; and great was the regret expressed at it, for he was much respected by all. When the school-hours were over, Ethel, the only daughter of Mrs. Bulkeley, joined her mother in her sitting room. The conversation almost immediately turned upon "Poor Jackson."

"I have been thinking a great deal about him," said Ethel; "I could not get him out of my mind all school-time—nor the poor driver too. How very shocking his death is, mamma, isn't it?"

"Very indeed," replied Mrs. Bulkeley; "and how truly does the death of both show us the necessity of being always prepared for an hour that

*must* come eventually, and which *may* come in a moment, and quite unexpected!"

"I was not thinking so much about *that*," replied Ethel; "but there is something, mamma, that puzzles me very much."

"Can I throw any light on your difficulty?" asked Mrs. Bulkeley.

"Yes, dear mamma, I dare say you can," returned Ethel:—then, looking earnestly at her, she said, "Is it a proof of God's anger against persons, when they come to such shocking and untimely deaths? I am so afraid, if it is, that Jackson deceived us, and was not such a good man as he seemed to be. And the driver of the coach, do you know what sort of a character he was?"

"I know nothing of the driver," replied Mrs. Bulkeley; "and I am not in the least apprehensive that Jackson was other than he appeared to be. You may set your mind at rest on that point. As to such deaths being a proof of God's anger against individuals, I have no hesitation in saying that I do not know a single text in Scripture which would warrant the conclusion; but I know many that warn us, in the strongest terms, from imputing peculiar sin to our neighbours, and thereby deeming them marked objects of the Divine vengeance; and as to the expression *untimely*, I question if it can be properly maintained."

"Why not, mamma?" said Ethel. "I mean by *untimely*, when persons who are young, or healthy, die suddenly or by accident."

"I understand you," replied Mrs. Bulkeley. "But who, my dear child, may dare to pronounce any death *untimely*? That which may appear such in our eyes, may be the very reverse in His sight to whom all things are manifest. Long life with Him is not length of years, but continuance in virtue. He then may behold one ripe for immortality who to us seems only to have entered upon existence; and the death that we deem premature and untimely may be proof of a warfare accomplished, a victory won, a race fully and honourably run."

"I know one of the texts to which you allude," said Ethel; "I thought of it myself. You mean the answer our Saviour made to his disciples when they told Him that Pilate had slain some Galileans while they were offering their sacrifices."

"I do so," returned Mrs. Bulkeley: "repeat it."

"Suppose ye that these Galileans were sinners above all the Galileans, because they suffered such things? I tell you, nay; but except ye repent, ye shall all likewise perish."

"Then surely your question is answered," said Mrs. Bulkeley; "and like fearful visitations are to be considered by us as *warnings*—this is our duty; as judgments in the case of others we are forbidden to look upon them, lest the law of Christian charity be broken or infringed upon."

There was a pause. The expression of Ethel's countenance betrayed to her mother that she had failed of conveying the impression she desired. "You are not satisfied, my dear?" said she.

"I am not, mamma," answered Ethel; "I am puzzled yet. You recollect the death of the wicked king of Israel: 'A certain man drew a bow at a venture, and smote the king.' Now don't you suppose many thought at the time that was an *accident* only; and yet we are certain that God directed the flight of the arrow, and that it was a direct judgment from heaven?"

"Certainly, it *was* an undoubted judgment," replied Mrs. Bulkeley; "but there is a wide difference between the case of Ahab, and that of others to which you allude. The Almighty, by his prophet, had openly

pronounced that monarch's doom, and his death was the fulfilment of a recorded threat."

"But suppose the driver was a very bad character—a drinking man, perhaps," returned Ethel. "Might I not think his death was a judgment upon him?"

"No, Ethel, no," replied Mrs. Bulkeley; "even in the case of a known sinner we must repress such an opinion; his death ought to be a warning to those whose habits resemble his; but we should not be justified in ascribing it to the immediate vengeance of God. No such death can take place without his permission, indeed; but we must never presume to make our thoughts his thoughts, and, prescribing rules for his dealings with us, confound mercy with justice, partial evil and universal good. When the Lord passed before Elijah, where did the prophet discern him? Not in the whirlwind, not in the earthquake, nor yet in the fire—these were the precursors of his presence, the warnings of his approach; but in 'the still small voice.' It is to that voice speaking in our hearts that we must listen. The awful demonstrations of his power are well calculated to awaken our awe and ensure our reverence, and thereby prepare us for the gentler display of his goodness. We must fear the vengeance that could consume us in a moment, and which assuredly will consume the impenitent sinner eventually; but, turning our attention from another to our own hearts, and applying the words of our blessed Saviour to ourselves: 'What is that to thee? follow thou me.' We must depart from our own evil ways, and love and adore the mercy and goodness that invites us to trust in him, and seeks to win us from the paths of destruction to those which lead to himself."

"But you never can mean to say, mamma," replied Ethel, "that I, or any one else, would be equally safe in a thunderstorm or any other danger, whether we were righteous or wicked, whether we were engaged in a good or bad act or undertaking?"

"Undoubtedly not," returned Mrs. Bulkeley; "but you are diverging from the point: conscience may justly interpret that as judgment to ourselves, which we are forbidden to pronounce as judgment to another. However, to answer you according, I dare say, to your meaning:—there is a wide difference at all times between the upright and the wicked, in favour of the former. God's especial care and providence are promised on his own unchangeable word to the faithful, and more especially when they are in the performance of their duty; and though, for purposes which may never be made manifest to us here, he allows fatal accidents to occur to his best servants, we may be assured he has in no degree falsified his word. That event which may seem most lamentable to others, may be to the individual himself a blessing and a reward,—a gentle translation from a world of sorrow to a state of bliss; for you must recollect we judge at all times only by partial instances of the Divine government, which are apt on that very account to mislead us; and that in all probability we should form very different conclusions if we could behold the whole wise system at once. But cases like these are not without their monitory voices, even to the most virtuous; they warn them to beware, even under the most favourable circumstances, of presumptuously depending on the Divine goodness, and making that obligatory on the part of God, which is the effect only of his free mercy and goodness."

Ethel's countenance began to clear. "Oh I was never afraid," said she, "that God would neglect those who love him; but I should like to know more. You are not tired of talking to me, are you, mamma?"

"I should strangely forget my duty if I were," replied Mrs. Bulkeley. "No, Ethel, it is sweet to a mother to attempt ever to make clear the ways of God to her child, and to vindicate the honour of Him who is the guardian of them both. If, then, the righteous may not dare to claim the Divine protection as his right, it must be quite clear that the unrighteous must forfeit it by his sin. When, therefore, we offend against our known duty, when we engage in a pursuit which we cannot justify to our conscience, we have cause to dread that the fiery bolt, the raging wave, or the trembling earth, may be instruments in His hand of punishment to us, and that He may make us warnings to others, since we contemned similar warnings to ourselves."

"Do you remember what papa said to Horace, when he went that time to skate by himself, and had nearly been drowned?" asked Ethel; "our conversation reminds me of it."

"I think I do," replied Mrs. Bulkeley; "but repeat it if you can."

"'Horace,' said papa, 'it was my will when I first took you upon the ice, and I considered it as for your good; I therefore held you by the hand, and I guarded you from every danger which you could neither have discerned nor avoided. You returned safe and invigorated by the exercise; and I was so pleased with your behaviour, that I was preparing a new and more honourable trial for you. You chose, however, to go to the lake without my permission, proud of your success; you apparently disdained my supporting hand and experienced eye; you rushed into danger, and, but for my timely interference, you would have lost your life. So men act by their heavenly Father, and so through their own rashness and misconduct perish.'

"You have very correctly remembered your father's words," said Mrs. Bulkeley.

"O Horace and I have often repeated them to each other since," returned Ethel. "But, mamma, the case was different with poor Jackson; he *was* doing his duty."

"I grant it," said Mrs. Bulkeley, "and therefore I remind you of what I before said respecting accidents that befall good persons."

"But his wife and eldest son," said Ethel, doubtfully; "might not his death be a punishment on them? they are not what he was."

"Probably not;" returned her mother, "and we must pray that they may profit by the sad event, which I again repeat is a warning to them, a call to repentance, and not a judgment upon them. Ever recollect, my dear child, that God does not act like us from a single motive. His purposes are as various as they are wise and merciful; and let it be your earnest study to discover on all occasions his intentions towards yourself, and to meet and fulfil them. The blow that strikes the sinner or the righteous, conveys, in each case, a lesson to all whose knowledge it reaches. If it warns the wicked to repent, it rouses the faithful to increased vigilance; if it causes the mourner's tears to fall, it calls forth an humble and dutiful submission to a superior will; if it deprives the widow and the orphan of their accustomed support, it kindles the generous sympathy of the liberal, and makes charity to abound. In all and every instance God speaks to the heart of each; happy are they, therefore, who hear and understand aright his meaning."

When Ethel came that evening to wish her mother "good night," she lingered by her side.

"What is it you want, my love?" asked Mrs. Bulkeley.

"Mamma," said Ethel, "you said this morning that it is our duty to find out what God speaks to ourselves when fatal accidents befall others. I have been trying to do so; here is my purse with the money that was given me on my birthday, may I send it to poor Jackson's family?"

Mrs. Bulkeley pressed her to her heart. "Certainly you may," answered she: then looking fondly at her she feelingly said, "Surely there is mercy in the afflictive blow, when it points to obedience and Christian feeling as its fruits."

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

### MANUFACTURE OF POTTERY.

#### HISTORICAL NOTICES OF EARTH-ENWARE.

'Two substances only, rich in instruction for the history of society, and of the globe itself, have been able to traverse accumulated ages, and bring to us the first glimpses of ancient times and people: these substances are, first, baked earth fashioned into vases and utensils of various sorts; and, secondly, the solid parts of animals and vegetables reduced to a fossil state.'

Great historical importance is given to *pottery* (or the art of making earthen vessels) in the above remark, made by the late eminent director of the porcelain manufactory at Sevres,\* nor does it appear that he has exalted it too highly when we consider the inefficiency of most substances as records of the past. Metals are difficult to extract from the earth, the common kinds being likewise subject to corrosion, and the precious metals extremely rare: the most lasting kinds of stone are also difficult to work, and have been necessarily of limited use: wood, which can be worked with ease, is not sufficiently durable to be of historical importance;—but clay, which lies almost at the surface of the earth, and within reach of every one, and which the most ignorant may fashion into vessels, and by the simplest means render durable; this substance is indeed historically valuable, and may well be said to have rendered the same kind of service in reading the history of remoter ages, that printing has done for the more enlightened.

The antiquity of the art is established by numerous and authentic memorials, so that it ranks next to the arts of making defensive weapons, and of fabricating from the skins of animals, or from vegetable fibre, a coarse kind of clothing. The word *pottery* is derived from the Latin word for a drinking vessel, and the earliest destination of earthen vessels was doubtless for the common purposes of domestic use. But there was a higher purpose to which they were likewise devoted, and which has been the means of preserving to us many interesting relics of the past: we allude to the religious use of earthen vessels of various kinds, and the custom of placing them in tombs and barrows along with the remains of the deceased.

Funeral vases in great variety, from rude and simple forms to those that are graceful and elaborate, have been found in the tombs of most ancient nations. An incalculable number have been met with in the burying-places of the ancient Britons, Scandinavians, Germans, French, Celts, Etruscans, Greeks, and Romans; and this practice has been also traced in America, among the ancient Peruvians, Chilians, and Mexicans. Earthen vessels in such situations remain almost unalterable, while weapons and even medals are corroded, and in the course of long ages are either rendered shapeless or destroyed. The following woodcut represents the interior of one of the tumuli so common in the north of Germany, and the sort of vessels that are found therein. These latter were doubtless the depositories of the ashes of the dead, as no skeleton or bones

\* Alexandre Brongniart



INTERIOR OF A TUMULUS NEAR RADEBERG.

were found in the tomb. In many cases, however, the skeletons still remain, with vases placed at the feet, and sometimes at the head also, or hanging on pegs from the sides of the tomb.

The following figure shows one form of arrangement of vases in those tombs where the body has been burnt, and the ashes are deposited in a central urn, surrounded by smaller vessels. The urns represented were



ARRANGEMENT OF VESSELS IN A TOMB NEAR CASTEL, IN THE DUCHY OF NASSAU.

found near Schierstein, in Nassau, the four smaller ones were inclined towards the large central urn which contained the ashes. The remaining vessels were some of glass, others of pottery, and had contained different liquids, such as wine, milk, balm, oil, &c.

This is not the place to consider the meaning and probable origin of this wide-spread custom, respecting which much difference of opinion

exists among archaeologists; but it is not a little remarkable that among so many distant nations, having different languages, habits, and superstitions, the practice should have been so much alike in all, and that pottery should everywhere have been considered a necessary part of the furniture of tombs. This circumstance, among others, speaks plainly of the common origin of mankind, and of certain religious views, however dim

and degenerate, which continued for ages to pervade the scattered family.

But while there is this general agreement in the nature and uses of ancient pottery, there are also distinctive marks peculiar to each country, and these marks are generally constant. The nature of the material, the general mode of fashioning it, the forms and ornaments, change not, as in the capricious manner of modern times, so as to destroy the nationality of the work; therefore these potteries become exceedingly valuable, in cases where they are very simple, as well as in those, such as the Grecian vases, where they largely reveal the history of the religion, wars, government, and civil and domestic habits of the people.

The potter's art is referred to in the Holy Scriptures in illustration of the weakness and fragility of man, and the omnipotence of God. The prophet Jeremiah was commanded to go down to the house of the potter, and "behold, he wrought a work on the wheels. And the vessel that he made of clay was marred in the hand of the potter: so he made it again another vessel, as seemed good to the potter to make it." The word of the Lord then came to the prophet, saying, "O house of Israel, cannot I do with you as this potter? saith the Lord. Behold, as the clay is in the potter's hand, so are ye in mine hand, O house of Israel." \* This lesson was repeated in a very significant manner before the ancients of the people and of the priests, when the prophet by the command of God took a "potter's earthen bottle," and brake it in their sight, saying, "Thus saith the Lord of Hosts, Even so will I break this people, and this city, as one breaketh a potter's vessel, that cannot be made whole again." †

The art of pottery can be traced in Egypt to a period extremely remote, for it is stated that all the processes of mixing the clay, and of turning, baking, and polishing the vases, are represented on the tombs of Thebes. The clay was kneaded with the feet, then formed into a mass of convenient size with the hand and placed on the wheel, which seems to have been of very simple construction, and turned

\* Jer. xviii. 3-6.    † Jer. xix. 10, 11.

with the hand. The various forms of the vases were made out with the finger during their revolution; the handles, if they had any, were afterwards affixed to them: and the devices and other ornamental parts were traced with a wooden or metal instrument, previously to their being baked. They were then placed on planks of wood to dry, and were afterwards arranged with great care in trays, and carried, by means of the usual yoke, borne on men's shoulders, to the oven. The potter's wheel was known at the earliest epoch of Egyptian history, of which the sculptures have been preserved, previous to the arrival of Joseph, and long before the foundation of Athens, which is sometimes said to have been the place where the potter's wheel was invented.

Instead of attempting a general description of ancient pottery, which would far exceed our limits, it must suffice to present a few specimens of these interesting relics, as they have been brought to light in various countries.

To begin with our own country and capital. A great number of antiquities have been dug up on the shores of the Thames, near new London Bridge, among which specimens of pottery and of tiles are numerous, the greater part being apparently of Roman workmanship, of which we have selected a beautiful fusiform *Amphora* as an example.



ROMAN AMPHORA,  
DUG UP NEAR LONDON BRIDGE

Some urns in black clay, and many other objects in earthenware, glass, and bronze, are not so evidently of Roman origin. Funeral urns and other relics have been found in the county of Gloucester, of which the



ANTIQUE URN,  
FOUND NEAR CIRENCESTER.

above was discovered near Cirencester, being half-filled with burnt bones. Some interesting decorated urns were found at Colney in Norfolk.



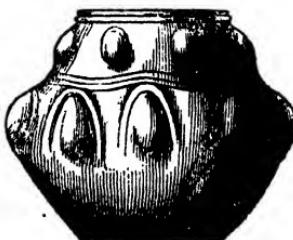
DECORATED URN,  
FOUND AT COLNEY IN NORFOLK.

They were made of a coarse kind of clay, blackish in the middle of its thickness, but reddish brown on



ANCIENT URN, FOUND NEAR NORWICH.

the outside, which is polished. They contained bones, ashes, and charcoal. Near Norwich was also found an ancient urn, with a remarkable ornament in relief. Likewise a thick black vase with seven knobs upon the neck, and seven upon the body. It has not been turned. On the downs of Wiltshire there are very



BLACK VASE,  
FOUND NEAR NORWICH.

many of those repositories of the ancient dead, which contain pottery. The urns are in some cases perfectly plain, in others they appear to have been ornamented by the pressure of the thumb, or the markings of the finger-nail, or more highly finished by means of some tool. From among the numerous specimens thus collected in Wilts, we select a beautiful, though irregularly formed, sepulchral urn, found in one of the barrows of the Wilsford group. This urn was placed in a circular cist, and contained a deposit of burnt bones. Close to

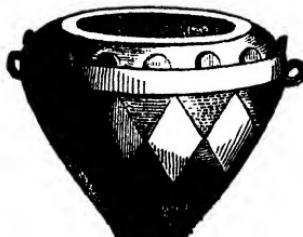


SEPULCHRAL URN,  
FOUND NEAR WILSFORD, WILTS.

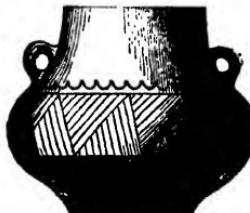
this urn was another oval cist containing ashes, together with a spear-head of brass, which appears to have

been almost melted into a rude lump, by the heat of the funeral pile. This barrow appeared to be a family sepulchre, as there were signs of three interments within a very short distance of each other. An interesting collection of urns, variously ornamented, has been found in the Deveril barrow, in Dorsetshire. Many were in a dilapidated state, and required great care in the removal. Their discoverer (W. A. Miles, Esq.) found that the best method of doing this was to make fires near them, and evaporate the moisture from the clay, which in the more ancient examples is of a porous nature. This process of evaporation was sometimes kept up until after night-fall, and Mr. Miles describes the scene on the downs as highly picturesque, while fagots were blazing, and revealing by their flickering light the anxious and half-terrified looks of the labourers, poring over these sepulchral urns, and viewing with wonder and awe the ashes of the dead contained therein. The county of Kent has also produced its relics. Near Southfleet some large urns were found, containing burnt bones and broken pieces of glass. Near the Margate sands, at the mouth of the Thames, a great number of antique earthen vessels and fragments have been brought up in fishermen's nets, several of which are inscribed with the maker's name, *Attilianus*, which sufficiently proves their Roman origin. Further researches have brought to light the fact that about two hundred years before the conquest of Britain by Julius Caesar, there existed upon an island at the mouth of the Thames a manufactory of pottery, possessed by *Attilianus*. The Margate sands are all that remains of this island, and the particular part known as Pudding-pan sand (on account of these fragments) was doubtless the site of the factory.

Germany is very rich in ancient urns and potteries. The following elegant urn, much decorated with designs in grey clay, was found in a large tomb, near Halle. The vase with two small handles on the neck is also German, although the exact place in which it was found is now unknown. The small urn was found with about 150 others in a tumulus



URN FOUND IN A TOMB NEAR HALLE.



GERMAN VASE, PLACE UNKNOWN.  
on the right shore of the Elbe, near  
the mouth of the Black Elster, in the  
ancient place of sacrifice.



FROM A TUMULUS  
ON THE SHORE OF THE ELBE.

In various parts of France, there have been rich discoveries of ancient pottery, especially on a hill between St. Dizier and Joinville, in Champagne, where the ruins of a Roman town were brought to light in 1772. Here were found two potter's kilns and a number of culinary articles: some unglazed, others covered with bright red glaze, and elegantly ornamented in relief. All these vessels are marked



URN FOUND NEAR DIEPPE.

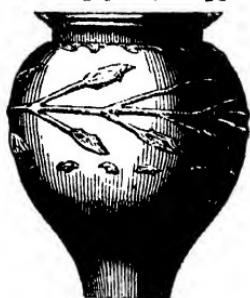
with the potters' names. Not far from Dieppe, a number of potteries, in fine ash-grey clay, have been met with, and among them the urn here represented, which is very remarkable for five depressions in its sides, which seem to have been made for the accommodation of five little urns, which were placed close around the principal one. An elegant vessel, in coarser clay, of the same colour, was found at the same place, and is considered to be Gallo-Roman, of the age of the Antonines.



VASE FOUND NEAR DIEPPE.

Roman pottery was fashioned with great care, and by means of processes which are still in use. The lathe-wheel was constantly employed for round articles, and the ornamental part was done by means of moulds, or of roulettes bearing the ornaments which were to form circular zones upon the circumference of vases or cups, or by stamps or seals, which were chiefly used for figures or flowers, to be placed in the centre of other ornaments. The names of the workers, so frequently found at the foot of Roman vessels, were also produced by a sort of stamp, made sometimes of hard-baked clay, sometimes of metal. There was a fourth method of applying ornaments to these potteries, which is remarkable, and seems to be distinctive of Roman workmanship. This was to charge a pipette or a spoon-shaped spatula with a portion of clay in nearly a liquid state, and apply it to the surface of the article to be ornamented, moulding it into the required shape, such as stems, foliage, &c. In this way, by using differently coloured clays, a pleasing effect was produced. Thus, a flowering branch was formed in white clay

on a vessel of the ordinary red pottery. A pipette, supposed to



ROMAN VASE, FOUND AT ZEHLBACH.

have been employed for this purpose, has been found among the pottery. The ancient Roman kilns in which their pottery was baked, have been found in considerable numbers in Germany, France, and England. The articles produced are generally simple and somewhat massive in form. The amphoræ, or wine jars, with two handles, are often of graceful proportions.

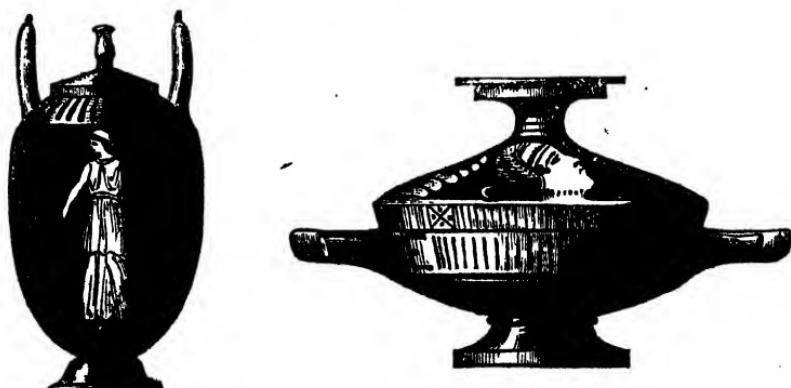
In ancient Greece, and in all her colonies, a simple kind of unglazed earthenware seems to have been made from the earliest times; but many of the glazed specimens are also of such high antiquity, that it would appear that the omission of lustre was voluntary, and did not arise from inability to produce it. Etruscan pottery appears to have been the work of less clever workmen, and to have been made without the advantage of the turning-lathe, and without glazing. The greater part of the Etruscan vessels (properly so called) are, therefore, of unequal thickness, and badly moulded, although often of agreeable forms, and ornamented with taste and care. The adjoining is a representation of an Etruscan urn, in black clay, much ornamented, but with some irregularities in the shape and position of the figures, &c. Some of the most admired vases, called Etruscan, are attributed to the Greek potters of the isle of Samos, so celebrated for the cleverness of their works. Recent discoveries in Etruria have brought to light a great number of beautiful vases, having all the characters of Greek pottery. So great is the delicacy and perfection of many specimens of

ancient Greek art, that they are viewed with astonishment by modern workmen, who know the difficulty of producing such results. At the manufactory at Sevres, some of these specimens have been given to the cleverest artificers, as problems in workmanship which they were to solve, not by explanations, but in

practice. The methods employed in working out these problems are given in Bröggiart's admirable work on Potteries. The adjoining engraving represents a Greek vase, in which the figures are red, on a black ground. The other illustration is of a covered cup or vase, having a similar mode of ornament.



ETRUSCAN URN.



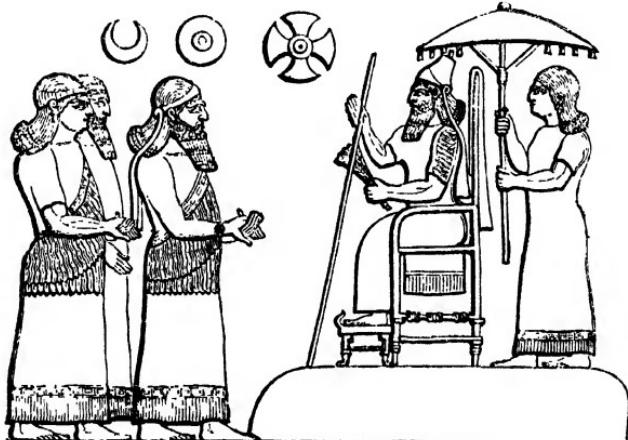
GREEK VASES.

THE  
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A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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NINEVEH.—WORSHIP.



STAR WORSHIP.

THE oldest form of false worship was that known as Zabaism, which prevailed at a very early period in Arabia and Chaldea. The sun, moon, and stars were believed to be the habitations of exalted intelligences, which animated these orbs as the soul of man animates his body, and caused their various motions. These supposed intelligences were chosen to be the mediators between the supreme God and the worshippers, and became the objects of prayer and adoration.

Allusion is made to the worship of the heavenly bodies by Job, who probably lived either in Chaldea or in the north of Arabia, and, according to Dr. Hales, one hundred and eighty-four years before the time of Abraham.

"If I beheld the sun when it shined, or the moon walking in brightness, and my heart hath been secretly enticed, or my mouth hath kissed my hand; this also were an iniquity to be punished by the judge; for I should have denied the God that is above." (Job xxxi. 26—28.)

From no grosser form of idolatry being mentioned in the enumeration of transgressions which the patriarch disclaims, we may infer that he witnessed the first tendency of men towards this sin, before it had yet become general, and while public law was on the side of God. But, as the downward course of sin is rapid, the public apostasy from God in Chaldea had probably passed through this its simpler phase, and assumed the grosser form of image-worship, at the time when the illustrious progenitor of the Jewish race was called away from its contamination to his pilgrim-walk with God.

We learn from Josh. xxiv. 2, that Abraham himself had been, in the former part of his life, involved in the Chaldean form of idolatry.

The traditions of the Jews and of the Arabians, who agree in common veneration for the memory of Abraham, may be mentioned as confirming the conclusion that the celestial bodies were become objects of worship in his era, though much weight cannot be attached to evidence so unsatisfactory. The Rabbins affirm that Terah, the father of the patriarch, was by trade a maker of idols ; that Abram, in righteous zeal (like his descendant Gideon in after times), destroyed his father's stock of images, and being accused for the sacrilege before Nimrod, was condemned to be burned alive. He came out of the flames, however, unhurt ; a fact which the Rabbins assert to be expressed in the words, "I am the Lord that brought thee out of Ur of the Chaldees ;" the word *Ur* in Hebrew signifying *fire*.

Traces of the star worship of the Assyrians occur in the earlier sculptures, but they are not numerous. In one from the north-west palace of Nimroud, two figures of a king are represented apparently worshipping over the sacred tree, with winged priests behind them.

On a slab from the centre ruius of Nimroud, where the king is seated in state with his officers and eunuchs before him ; above him is a disk with two concentric circles, a crescent, and a four-rayed star of peculiar form, the rays being dilated like the arms of a Maltese cross.



DEVICE ON AN ASSYRIAN CYLINDER.

These are all the representations of the heavenly bodies which we have been able to trace on the sculptures, so far as published : and these all belong to the earlier monuments ; at Khorsabad they are not seen.

But the comparative simplicity of star-worship very early degenerated into gross idolatry ; and, without being itself relinquished, became associated with other forms of false devotion, either growing out of the same root, or springing from similar erroneous notions.

There were introduced in the course of ages the multitudes of gods and goddesses, whose rites, often foolish, cruel, and impure, have enslaved the minds of pagan nations ; such as we read of in the complicated mythologies of old Greece and Rome, and such as we still see in the gigantic idolatry, hoary with antiquity, yet still in terrible vigour, of Hindostan.

The names of the principal of the deities worshipped by the Assyrians,

when their mythology had grown up into a system, have been recovered from the monumental inscriptions by the learning and industry of Colonel Rawlinson. They are Assarac, Beltis, Bar (called also Seb, and Sur), Ani, Dagon, Nit, Artenk, Shemir (called also Husi), Iana, Horus, Tal, Sut, Rha, Hem, Nebo, Astarte, Bel, Sheshach, Merodach, Gad, and Minni. The first five of these are called in the inscriptions of Sardanapulus, "the principal of the gods;" and Assarac, "the great lord, the king of all the great gods," "the great and powerful god," "the father of the gods," is always placed at the head of the catalogue, as the special divinity of Assyria. Colonel Rawlinson feels almost certain that this name represents the Biblical Nisroch, the god of Sennacherib, in whose temple he was slain while engaged in worship.

He also shows that the country of Assyria was named after Assarac, its tutelar divinity, the same word being applied to both the land and the god, not only in its full and complete spelling, but also in that of an abbreviated monogram; and suggests that the deity in question was the Asshur of the Hebrew Scriptures, the founder of the nation, who in after times became invested by his descendants with divine attributes.

Beltis is called the "protector, mother of the gods." This was probably the same as Astarte of the Phoenicians and Ashtoreth of the Sacred Scriptures; that "Queen of Heaven," to whose abominable rites the Hebrew people were so incorrigibly addicted in the later periods of the monarchy.

She was worshipped in association with Baal (of which Beltis = Baaltis, is but the feminine form), typifying the moon, as that renowned and widespread idol represented the sun. The earliest form of decided apostasy from Jehovah into which Israel fell, was the worship of these associated demons, Baal and Ashtoreth; and their abominable rites seem to have been retained by that infatuated people with a tenacity that resisted all the warnings of God's messengers, and all the chastisements of His hand, and at length brought about the overthrow of their monarchy and their national captivity. Almost as soon as they obtained possession of the promised land, they turned aside "like a deceitful bow." See Judg. ii. 11-13.

And the burning incense to Baal, and the offering of cakes to the Queen of Heaven, were the solemn accusations over and over again brought by Jehovah against His people by the mouth of His prophets, when the King of Babylon was now even at their gates.

Ashtoreth is specially called the goddess of the Zidonians in 1 Kings xi. 5, and 2 Kings xxiii. 13, to whom Solomon built a temple on the Mount of Olives. Her worship was accompanied with rites and customs of abominable uncleanness, and was often celebrated in groves, which on that account participated in the idolatrous veneration with which the goddess was regarded, and became the objects of divine denunciation. Jezebel, the wicked wife of Ahab, herself a Zidonian, maintained four hundred prophets of the groves, when Baal's prophets were four hundred and fifty men. (1 Kings xviii. 19.)

It is interesting to find the name of Dagon among the gods which Col. Rawlinson has identified. This was the favourite god of the Philistines, a maritime nation, who represented him by a monstrous combination of a human head, arms, and chest, united to the belly and tail of a fish. The temple at Gaza dedicated to this idol was the scene of Samson's last and greatest exploit; and in another at Ashdod, Dagon himself was humbled before the captive ark of Jehovah.

"And the Philistines took the ark of God, and brought it from Eben-ezer unto Ashdod. When the Philistines took the ark of God, they brought it into the house of Dagon, and set it by Dagon. And when they of Ashdod arose early on the morrow, behold, Dagon was fallen upon his face to the earth before the ark of the Lord. And they took Dagon, and set him in his place again. And when they arose early on the morrow morning, behold, Dagon was fallen upon his face to the ground before the ark of the Lord; and the head of Dagon and both the palms of his hands were cut off upon the threshold: only the stump [or, the fleshy part, *marg.*] of Dagon was left to him. Therefore neither the priests of Dagon, nor any that come into Dagon's house, tread on the threshold of Dagon in Ashdod unto this day." (1 Sam. v. 1-5.)

Whether any connexion existed between the name of this god, who, as we have seen, was worshipped in common by the inhabitants of Assyria, and by the Philistines of the Mediterranean shore, and the sea-monsters, half men, half fish, whom Chaldean tradition declared to have appeared on the southern confines of Babylonia, we cannot tell. The name Oannes, applied to the first of these fabulous beings, has been rather fancifully supposed to be the same as Noah, altered by transposition; and Dagon has been resolved into Dag-aun, or Dag-Oannes, the ship (fish?) of Noah.

In an elaborate sculpture of the latter Assyrian period occurs a scene which we shall describe hereafter. It is an expedition against some maritime place of strength apparently on the Syrian coast. Among other tutelary



DAGON.

divinities, the expedition is accompanied by Dagon, who is drawn more than once among the ships, just in the form described above. To the body and tail of a fish, extended horizontally in the sea, are affixed the perpendicular trunk and fore parts of a man, invested with the sacred cap, and elevating his right hand. Similar figures occur on cylinders.

Bel or Baal, already alluded to, signifies *Lord*, the former being the Chaldee, the latter the Hebrew form. No idol is more frequently mentioned in Holy Scripture than this, and to the worship of none were the people of Israel more incorrigibly attached. He appears to have been worshipped by all the western Asiatics, but especially by the Phœnicians and the Babylonians. A magnificent temple was devoted to him at Babylon, which was plundered by Xerxes.

We have already intimated that Baal originally signified the sun, the source of light and heat to the natural world; or, rather, perhaps, the deity supposed to animate and inhabit the sun.

The latter names in the list gathered from Col. Rawlinson's readings,

are chiefly interesting because they occur in the Sacred Scriptures, for the most part in connexion with Babylon at the time of its approaching ruin. As we believe, however, that there is some doubt upon their recognition, and as we have nothing of importance to say upon them, we dismiss them with this slight notice.

There is a remarkable representation, not uncommon on the monuments, even of the early period, which appears to symbolise the supreme Deity. It is a circle furnished with the expanded wings of a bird, within which is placed a human figure, crowned with the sacred or bull-horned cap, but merging from the waist downward into the spread tail of a bird. This seems the only object to which the act of worship is represented. "The king is generally standing or kneeling beneath this figure in the circle, his hand raised in sign of prayer or adoration. . . . The symbol is also seen above him when in battle, and during his triumphal return. It is never represented above any person of inferior rank, but appears to watch especially over the monarch, who was probably typical of the nation. When over the king in battle, it shoots against the enemies of the Assyrians an arrow, which has a head in the shape of a trident. If it presides over a triumph, its action resembles that of the king, the right hand being elevated, and the left holding the unbent bow; if over a religious ceremony, it carries a ring, or raises the extended right hand." Sometimes the human bust is not seen, the circle furnished with wings and tail, or with wings alone, seeming to be substituted for the more complete form.



FEROHERS.

Symbols, more or less closely resembling these, are common, not only on Chaldaic monuments, but also on those of Persia, of the Achaemenian dynasty, and even on those of Old Egypt. Mr. Vaux states that the figures represent on the Persian sculptures the beings called Feroheres, tutelary spirits or angels; the supposed prototypes or representatives of every reasonable being that was destined to appear upon the earth.

The notion of guardian deities seems to have been familiar to the Assyrians long before the rise of the Persian monarchy, as we have seen in Col. Rawlinson's readings of the inscriptions. Assarac or Asshur was the tutelary of Assyria; it is therefore no wonder that Assyrian worshippers should assign to him the chief place in the national honour, and even address him as the principal of the gods; and thus the characters, which at first seem inconsistent, of supreme deity, and Feroher or guardian angel, might easily be united in him who was figured under the symbol of the god of the winged circle.

## THE WRECK.



"It blew a tremendous gale last night," exclaimed Mr. Thompson to his son William, as he entered the breakfast-room ; "I fear we shall hear of great damage done to the shipping."

"Jones has just told me," replied William, "that there are two brigs on the sands near the Goodwin light ; and only think, papa, that noble vessel, which sailed with the morning tide yesterday, is totally wrecked ! She, too, was driven on the sands in the course of the night ; and though it seems she succeeded in getting off, she was so much injured that she almost immediately afterwards went to pieces, and nearly all on board perished with her."

"Put on your hat," said Mr. Thompson, "and we will walk to the pier ; we shall get back before your mamma is ready for breakfast."

William instantly did as he was bid—not that it was his usual custom to do so ; for, like many other little boys, he was very headstrong, and too often preferred doing what he liked himself to obeying his parents. Curiosity now prompted obedience, and he was by his father's side without the slightest delay.

No sooner had they reached the harbour than a fearful sight presented itself. The sea was still violently agitated, and the waves continued to dash over the end and sides of the pier, while the wind, still blowing with strong gusts, rendered standing almost impossible. All was bustle and anxiety ; the sailors and fishermen were passing to and fro, too much occupied by their own thoughts to heed the questions which the mere spectators put to them. Several dead bodies lay extended on the pier head. William shuddered. "O pray let us go home," exclaimed he ; but before his father could make any reply, the attention of both was attracted by the piercing lamentations of a poor woman, who was kneeling by the side of a boy, apparently about twelve years old, and who was wringing her hands in an agony of distress.

"O Ned, Ned!" she sobbed, "and is it come to this!" then again and again she repeated, "but he would always have his own way."

Mr. Thompson, turning to one of the bystanders, asked an explanation of the unhappy mother's words.

"I don't like to speak ill of any one," said the fisherman to whom he addressed himself, "and especially of them who can no longer defend themselves: but, if the truth must be spoken, the poor boy that lies there was always a sad, wilful lad, who would have his own way, come what would of it. He was very anxious to go to sea; but neither his father nor mother was willing he should, for he was their only child, and not very strong. All they said, however, was of no use—nay, perhaps, for that is the case with all obstinate, self-willed people, it made him still more determined to have his own way. So yesterday morning, when his father was still away with the mackerel boats, he got on board the 'Resolution,' and sailed before any one knew anything about the matter. His mother was looking for him, half distracted, all the day, and has been on the pier the greater part of the night. His dead body has just been hauled up with several others that you see there."

William again grasped his father's hand, and, hearing another shriek, drew him from the spot. "I cannot, indeed I cannot stay any longer," cried he. Mr. Thompson obeyed his motion; they walked quickly away, nor was a single word spoken by either till they reached the house. Mrs. Thompson was waiting breakfast for them. William sat down in silence, but the expression of his countenance having caught the attention of his mother, she anxiously asked what was the matter. William returned no answer, but, rising from his seat, he threw his arms around her neck, and burst into a violent flood of tears.

"O mamma!" sobbed he, as soon as he could speak, "I have seen such a sight! I have heard such cries! O, I shall never forget them," and he shuddered at the recollection. "Forgive me," he continued passionately, "for being so naughty and obstinate as I know I have often been. Forgive me now; and never, never, will I try to have my own way again, and disobey you."

Mrs. Thompson looked at her husband, who, in a few words, explained what had occurred.

"Thus," said he, as he concluded his distressing story, "thus has God thought fit, in the instance before us, to punish the breach of his holy commandment—'Honour thy father and thy mother, that thy days may be long in the land.' The sea, by his permission, has swallowed up the disobedient child almost in sight of his home; and made his fate an awful warning to all who, like him, are tempted to forget the great and sacred duty they owe to their parents."

#### RICH AND POOR.

BESIDES those who work for their living, some at a higher rate and some at a lower, there are others who do not live by their labour at all, but are rich enough to subsist on what they or their fathers have laid up. There are many of these rich men, indeed, who do hold laborious offices, as magistrates and members of Parliament. But this is at their own choice. They do not labour for their subsistence, but live on their property.

There can be but few of such persons, compared with those who are

obliged to work for their living. But though there can be no country where all, or the greater part, are rich enough to live without labour, there are several countries where all are poor ; and in those countries where all are forced to live by their labour, the people are much worse off than most of the labourers are in this country. In savage nations almost every one is half starved at times, and generally half naked. But in any country in which property is secure, and the people industrious, the wealth of that country will increase ; and those who are the most industrious and frugal will gain more than such as are idle and extravagant, and will lay by something for their children, who will thus be born to a good property.

Young people who make good use of their time, are quick at learning, and grow up industrious and steady, may, perhaps, be able to earn more than enough for their support, and so have the satisfaction of leaving some property to their children ; and if they, again, should, instead of spending this property, increase it by honest diligence, prudence, and frugality, they may, in time, raise themselves to wealth. Several of the richest families in the country have risen in this manner from a low station. It is, of course, not to be expected that many poor men should become rich, nor ought any man to set his heart on being so ; but it is an allowable and a cheering thought, that no one is shut out from the hope of bettering his condition, and providing for his children.

And would you not think it hard that a man should not be allowed to lay by his savings for his children ? But this is the case in some countries, where property is so ill secured that a man is liable to have all his savings forced from him, or seized upon at his death ; and there all the people are miserably poor, because no one thinks it worth his while to attempt saving anything.

There are some countries which were formerly very productive and populous, but which now, under the tyrannical government of the Turks, or other such people, have become almost deserts. In former times Barbary produced silk, but now most of the mulberry-trees (on whose leaves the silk-worms are fed) are decayed ; and no one thinks of planting fresh trees, because he has no security that he shall be allowed to enjoy the produce.

Can it be supposed that the poor would be better off if all the property of the rich were taken away and divided among them, and no one allowed to become rich for the future ? The poor would then be much worse off than they are now ; they would still have to work for their living as they do now ; for food and clothes cannot be had without somebody's labour. But they would not work near so profitably as they do now, because no one would be able to keep up a large manufactory or farm well stocked, and to advance wages to workmen, as is done now, for work which does not bring in any return for, perhaps, a year or two. Every man would live, as the saying is, "from hand to mouth," just tilling his own little patch of ground, enough to keep him alive, and not daring to lay by anything, because if he were supposed to be rich, he would be in danger of having his property taken away and divided.

And if a bad crop, or a sickly family, brought any one into distress, which would soon be the case with many, what would he do after he had spent his little property ? He would be willing to work for hire, but no one could afford to employ him, except in something that would bring in a very speedy return ; for even those few who might have saved a little money would be afraid to have it known, for fear of being forced to part with it. They would hide it somewhere in a hole in the ground, which used formerly

to be a common practice in this country, and still is in some others, where property is very scarce. Under such a state of things the whole country would become poorer and poorer every year: for each man would labour no more than just enough for his immediate supply, and would also employ his labour less profitably than now, for want of a proper division of labour; and no one would attempt to lay by anything, because he would not be sure of being allowed to keep it. In consequence of all this, the whole produce of the land and the labour of the country would become much less than it is now; and we should soon be reduced to the same general wretchedness and distress which prevails in many half-savage countries. The rich, indeed, would have become poor; but the poor, instead of improving their condition, would be much worse off than before. All would soon be as miserably poor as the most destitute beggars are now: indeed, so far worse, that there would be nobody to beg of.

It is best for all classes, the rich, the poor, the middling, that property should be secure, and that every one should be allowed to possess what is his own, to gain whatever he can by honest means, and to keep it or spend it as he thinks fit,—provided he does no one any injury. Some rich men, indeed, make a much better use of their fortunes than others: but one who is ever so selfish in his disposition can hardly help spending it on his neighbours. If a man has an income of 5,000*l.* a-year, some people might think, at first sight, that if his estate were divided among one hundred poor families, which would give each of them 50*l.* a-year, there would thus be, by such a division, one hundred poor families the more enabled to subsist in the country: but this is quite a mistake. Such would, indeed, be the case, if the rich man had been used to eat as much food as one hundred poor families, and to wear out as much clothes as all of them. But we know this is not the case. He pays away his income to servants, and labourers, and tradesmen, and manufacturers of different articles, who lay out the money in food and clothing for their families: so that in reality the same sort of division of it is made as if it had been taken away from him. He may, perhaps, if he be a selfish man, care nothing for the maintaining of all these families, but still he does maintain them; for if he should choose to spend 1,000*l.* a-year in fine pictures, the painters who are employed in those pictures are as well maintained as if he had made them a present of the money, and left them to sit idle. The only difference is, that they feel they are honestly earning their living, instead of subsisting on charity; but the total quantity of food and clothing in the country is neither the greater nor the less in the one case than in the other. But if a rich man, instead of spending all his income, saves a great part of it, this saving will almost always be the means of maintaining a still greater number of industrious people: for a man who saves, hardly ever, in these days at least, hoards up gold and silver in a box, but lends it out on good security, that he may receive interest upon it. Suppose, instead of spending 1,000*l.* a-year on paintings, he saves that sum every year. Then this money is generally borrowed by farmers, or manufacturers, or merchants, who can make a profit by it in the way of their business, over and above the interest they pay for the use of it. And in order to do this, they lay it out in employing labourers to till the ground, or to manufacture cloth and other articles, or to import foreign goods: by which means the corn, and cloth, and other commodities of the country, are increased.

The rich man, therefore, though he appears to have so much larger a share allotted to him, does not really consume it, but is only the channel

through which it flows to others. And it is by this means much better distributed than it could have been otherwise.

The mistake of which I have been speaking, of supposing that the rich cause the poor to be the worse off, was exposed long ago in the fable of the stomach and the limbs :—

“Once on a time,” says the fable, “all the other members of the body began to murmur against the stomach, for employing the labours of all the rest, and consuming all they had helped to provide, without doing anything in return. So they all agreed to strike work, and refused to wait upon this idle stomach any longer. The feet refused to carry it about; the hands resolved to put no food into the mouth for it; the nose refused to smell for it, and the eyes to look out in its service; and the ears declared they would not even listen to the dinner-bell; and so of all the rest. But after the stomach had been left empty for some time, all the members began to suffer. The legs and arms grew feeble; the eyes became dim, and all the body languid and exhausted.

“‘Oh, foolish members!’ said the stomach, ‘you now perceive that what you used to supply to me, was in reality supplied to yourselves. I did not consume for myself the food that was put into me, but digested it, and prepared it for being changed into blood, which was sent through various channels as a supply for each of you. If you are occupied in feeding me, it is by me, in turn, that the blood-vessels which nourish you are fed.’”

You see, then, that a rich man, even though he may care for no one but himself, can hardly avoid benefiting his neighbours. But this is no merit of his, if he himself has no desire or wish to benefit them. On the other hand, a rich man who seeks for deserving objects to relieve and assist, and is, as the Apostle expresses it, “ready to give, and glad to distribute, is laying up in store for himself a good foundation for the time to come, that he may lay hold on eternal life.” It is plain from this, and from many other such injunctions of the Apostles, that they did not intend to destroy the security of property among Christians, which leads to the distinction between the rich and the poor; for their exhortations to the rich to be kind and charitable to the poor, would have been absurd if they had not allowed that any of their people should be rich; and there could be no such thing as charity in giving anything to the poor, if it were not left to each man’s free choice to give or spend what is his own. Indeed, nothing can be called your own which you are not left free to dispose of as you will. The very nature of charity implies that it must be voluntary: for no one can be properly said to give anything that he has no power to withhold. The Apostle Paul, indeed, goes yet further, when he desires each man “to give according as he is disposed in his heart, and not grudgingly,” because “God loveth a cheerful giver.”

When men are thus left to their own inclinations to make use of their money, each as he is disposed in his heart, we must expect to find that some will choose to spend it merely on their own selfish enjoyments. Such men, although, as you have seen, they do contribute to maintain many industrious families without intending it, yet are themselves not the less selfish and odious. But still we are not the less forbidden to rob, or defraud, or annoy them. Scripture forbids us to covet our neighbour’s goods, because they are our neighbour’s, and not because he makes a right use of them.

When you see a rich man who is proud and selfish, perhaps you are tempted to think how much better a use you would make of wealth if you

were as rich as he. I hope you would : but the best proof you can give that you would behave well if you were in another's place, is by behaving well in your own. God has appointed to each his own trials, and his own duties ; and He will judge you, not according to what you think you would have done in some different station, but according to what you have done, in that station in which He has placed you.

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### THE HIPPOPOTAMUS.



THE Hippopotamus is generically distinguished by the following characters : four toes on each foot, nearly equal, terminated by small hoofs ; six molar teeth on each side of each jaw, the anterior three of which are conical, the others presenting two pairs of points which, when worn down, assume the figure of a trefoil ; four incisors in each jaw, those of the upper short, conical, and recurved ; those of the lower projecting horizontally, the middle pair long, and cylindrical, the outer pair short, both pointed ; canines in both jaws, the upper short, the lower assuming the form of thick, cylindrical, curved tusks, cut off obliquely with a chisel-like edge ; the upper short tusk is also worn down obliquely by rubbing against its opponent.

The animals of this genus are of vast bulk, the body being immensely massive, and the head enormous, broad and flattened, with a swollen muzzle inclosing the great incisors and canines. The body is destitute of hair ; the legs are short but thick ; the tail and the ears are very short ; the eyes are small, and set far up on the flat summit of the head. The stomach is divided into several sacs. The hide is coarse, and of immense thickness, being upwards of two inches in depth on the back and sides.

Africa, that continent of uncouth and gigantic animals, is the exclusive home of the Hippopotami ; which wallow in its great rivers from the Sene-gal and the Upper Nile to the streams of the Cape Colony. M. Desmoulin considers that the species of the northern rivers is distinct from that of the south, and he distinguishes the two as *Hippopotamus Senegalensis*, and

*H. Capensis.* The differences, however, are anatomical, and do not affect either the external appearance, or the habits of the animals, so that in a general description we may speak of both as one.

The recent zoological investigations of Dr. Smith in South Africa have added many interesting particulars to our knowledge of these huge animals. "In districts fully inhabited by man," he observes, "they generally pass the day in the water, and seek their nourishment during the night; but in localities differently circumstanced they often pass a portion of the day as well as the night upon the dry land. In countries in which the night-time constitutes the only safe period for their leaving the water, they are generally to be seen effecting their escape from it immediately before dark, or are to be heard doing so soon after the day has closed, and according to the state of the surrounding country; they then either directly commence feeding, or begin a journey towards localities where food may exist. When, previous to nightfall, they may have been in pools or rivers, they are generally at once enabled to commence feeding on reaching the dry land: but when they may have passed the day in the sea, they require commonly to proceed some distance after leaving it, before they find the grass which appears congenial to their palate. It is not every description of grass that Hippopotami seem to relish: they often pass over, in search of food, luxurious green swards, which would strongly attract many other animals which feed upon grass."

When undisturbed, the Hippopotamus is quiet and inoffensive; or at least is injurious only by his depredations on cultivated grounds. But attacked and hard pressed he becomes furious, and rushing with open jaws on his enemy, his giant strength and overwhelming impetus render him a formidable adversary. In a boat it is dangerous to irritate him. Captain Owen records an incident that had nearly been fatal. A party being engaged in exploring a river, a violent shock was suddenly felt beneath the boat, when suddenly "a monstrous Hippopotamus reared itself up from the water, and in a most ferocious and menacing attitude rushed open-mouthed at the boat, and with one grasp of its tremendous jaws seized and tore seven planks from her side. The creature disappeared for a few seconds, and then rose again, apparently intending to repeat the attack, but was fortunately deterred by the contents of a musket discharged in its face. The boat rapidly filled, but as she was not more than an oar's length from the shore they succeeded in reaching it before she sank. The keel, in all probability, had touched the back of the animal, which, irritating him, occasioned this furious attack; and had he got his upper jaw above the gunwale, the whole broadside must have been torn out. The force of the shock from beneath, previously to the attack, was so violent that her stern was almost lifted out of the water, and Mr. Tombs, the midshipman steering, was thrown overboard, but fortunately rescued before the irritated animal could seize him."<sup>\*</sup>

The flesh of this vast creature, which has been compared to an immense, overgrown *prize-pig*, is much esteemed as an article of food. In South Africa it is in high request with the colonists, and we are told that the epicures of Cape Town do not disdain to use their influence with the country farmers to obtain a preference in the matter of *Sea-coo's speck*, as the fat which lies immediately under the skin is called when salted and dried. Out of its thick hide, excellent whips are manufactured. They are said to be made by cutting the fresh skin into triangular strips five or six

\* Owen's "Narrative of Voyages, &c."

feet in length ; one end of the strip is pointed, and it gradually widens till the breadth at the upper end is equal to the intended circumference of the bulk of the whip. The strip is then rolled up so as to form a conical pipe, and being firmly bound to keep it in its place, is dried in the sun. A light, elastic, and durable whip is produced by this process. The great tusks of the Hippopotamus are composed of the very best ivory, and are imported into Europe in great numbers, where they bear a high price. They are largely used in the construction of artificial teeth, for which their whiteness well adapts them.

Though scarcely less bulky than the Elephant, the shortness of its legs makes the Hippopotamus seem much smaller ; it rarely exceeds five feet in height. Its general colour is described as dusky brownish red, passing on the sides and limbs into a light purple red or brown : the under parts, the lips, and the eyelids are light wood-brown, with a tinge of flesh-colour ; the hinder and lower parts are freckled with dusky brown. Le Vaillant observes, that when seen beneath the water, the skin appears of a deep blue.

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#### WILD FLOWERS.



WOOD STRAWBERRY. (*Fragaria vesca.*)

THE Strawberry is to be found in most of the woods and thickets of our island, and its white blossom is among the flowers of May and the two

following months. As early as March, however, we may gather a plant so similar to it, both in flower and leaf, that only a botanist would mark the difference between them. This is the Barren Strawberry (*Potentilla fragariastrum*), which grows on woods, banks, and dry pastures. Unlike our wild Strawberry flower, however, it is succeeded by no rich fruit. Our native fruits are few, and the Strawberry is the best and sweetest of them all, and, indeed, is unrivalled, for its wholesome qualities, by any fruit either wild or cultivated. Country children well know its worth; but the larger Strawberries, reared in gardens, are so much more in use for desserts, that the wild species is rarely sold in towns. In France, Strawberries are used not only, as with us, as a fruit for the table and for preserves, but for making an agreeable drink, called *Bavaroise à la Grecque*, which consists of the juice mingled with lemon, sugar, and water. The sweet odour of the Strawberry well deserves the allusion made to it in its botanical name, which is taken from *fragrans*; while our familiar one of Strawberry was probably given to it from the old practice of threading the fruits on a straw, and thus offering them for sale, a practice still followed in some villages. If we remove our wild Strawberry from the shade of the woodland boughs, and plant it in a garden where the sun can reach it, its flavour becomes sweeter. It was probably the first species cultivated in this country, and the Strawberry was reared in the English garden at an early period. Lidgate's song, composed at a date previous to the year 1483, shows that it was sold in London about that time:—

“Then unto London I did me hye,  
Of all the lands it beareth the prýse;  
Gode pescode owne began to cry,  
Strabery rype, and cherrys in the ryso.”

The hautboy is sometimes found in our woods, but is probably not truly wild.

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#### METEORIC STONES.

METEORIC stones are a species of iron ore, which have at different times been known to fall from the atmosphere.

They have been seen only in shapeless masses, of from a few ounces to several hundred pounds in weight. Their texture is granular. They are covered externally with a thin blackish crust, and are internally of an ashy grey colour, mixed with shining minute particles. All meteoric stones consist of iron and a portion of nickel.

There is sufficient evidence to show that solid masses of stone have been observed to fall from the air at a period considerably anterior to the Christian era. Notwithstanding this, so very extraordinary was the phenomenon, that until the year 1802, it was generally regarded by philosophers as a vulgar error. Mr. Howard in that year submitted to the Royal Society a paper which contained an accurate examination of the testimonies connected with events of this kind; and described a minute analysis of several of the substances which had been said to have fallen in different parts of the globe. The result of this examination was, that all these stony bodies differ completely from every other-known stone; that they all resemble each other, and are all composed of the same ingredients.

The greatest number of the stones which have fallen from the air have

been preceded by the appearance of luminous bodies or meteors. These meteors have burst with an explosion, and then the shower of stones has fallen to the earth. Sometimes the stones have continued luminous until they sunk into the earth, but most commonly their luminousness disappeared at the time of the explosion. Their motion through the air is surprisingly rapid, in a direction nearly horizontal; but they seem to approach the earth before they explode. In their flight they have frequently been heard to yield a loud whizzing sound. They are hot when they first reach the earth, and exhibit, on their surface, visible marks of fusion.

A general tradition has prevailed in almost all ages, and amongst all people, of the fall of solid bodies from the atmosphere, under various denominations, but, with us, more particularly, under that of *thunderbolts*. In barbarous and uncivilized countries, these have usually been ascribed to the miraculous judgment of the Deity, and they may be considered as the true origin of the worship of stones. The image of Diana, mentioned in the Acts of the Apostles, as believed by the Ephesians to have fallen down from Jupiter, and the Palladium, or sacred statue of Minerva, which also is said to have fallen from heaven, and to have been preserved in Troy, as a treasure, on the safety of which that of the city depended, had each, no doubt, this origin. The Psalmist evidently alludes to the falling of meteoric stones, when, speaking of the Almighty, he says, "He made darkness his secret place: his pavilion round about him with dark water, and thick clouds to cover him. At the brightness of his presence his clouds removed; hail-stones and coals of fire. The Lord also thundered out of heaven, and the Highest gave his thunder, hail-stones and coals of fire."

Among numerous other instances of these stones, it is recorded that on the 7th of November 1492, betwixt eleven and twelve o'clock at noon, a dreadful clap of thunder was heard at Ensisheim, a considerable town in Alsace, and that a huge stone was seen to fall on a field lately sown with wheat. On several of the neighbours going to the place, the hole it had formed was found to be about three feet in depth, and the stone when dug out, weighed two hundred and sixty pounds. It was preserved in the Cathedral of Ensisheim until the beginning of the French Revolution, when it was conveyed to the public library at Colmar. There are in the British Museum two small pieces of this stone, and fragments of several other meteoric stones which have fallen in different parts of the world.

In the British Museum specimens may also be seen of the following:—one of the many stones which fell, July 3rd, 1753, at Plaun, in the circle of Bechin, Bohemia, and which contain a great proportion of attractable iron;—specimens of those that were seen to fall at Roquefort and at Juliac, in the Landes of Gascony, July 24th, 1790;—one of a dozen stones of various weights and dimensions that fell at Sienna, in Tuscany, Jan. 16th, 1794;—fragments of the meteoric stone, weighing 56 pounds, which fell near Wold Cottage, in Yorkshire, Dec. 13th, 1795;—fragment of a stone of twenty pounds, which fell in the commune of Sales, near Villefranche, in the department of the Rhône, March 12th, 1798;—specimens of stone fallen near the city of Benares, in the East Indies, Dec. 19th, 1798;—entire and broken specimens of the meteoric stones of which a shower descended at Aigle, in the department of the Orne, April 26th, 1803;—fragment of that of Smolensk, June 27th, 1807;—fragment of one of those that were seen to fall at Weston, in Connecticut, Dec. 14th, 1807;—two meteoric stones with shining black surfaces, fallen May 22nd, 1808, at Stannern, in Moravia;—two fragments of the Tipperary meteorite which

fell in August 1810 : it contains quartz globules of a green colour, owing to oxide of nickel ;—a fragment of that of Berlanguillas, in Catalonia, July 8th, 1811 ;—a fragment of one, weighing 66 pounds, which fell August 5th, 1812, near Chantonnay, in La Vendée ;—fragment of the meteoric stone which fell at Adare, in the county of Limerick, Ireland, in 1813 ;—fragment of one of those which fell Sept. 5th, 1814, at Agen, in the Pyrenees, and another of that which descended at Juvénas (Ardèche), on June 15th, 1821 ;—a portion of the meteorite which fell at Nanjenoy in Maryland, February 10th, 1825 ;—three entire stones and a fragment of those that were seen to fall, Oct. 13th, 1838, at Old Bokkeveld, at the Cape of Good Hope. (See *Philosoph. Trans.* for 1839.)

Two stones fell near Verona in Italy, in the year 1672, one of which weighed three hundred and the other two hundred pounds.

Mr. Sowerby, the publisher of English Botany, and of several other highly estimable works, possessed a meteoric stone which fell near Wold Newton in Yorkshire, in the afternoon of the 13th of December 1795, and weighed fifty-six pounds. Whilst this stone was in motion through the air, several persons perceived a body passing along the clouds, although they were unable to ascertain what it was. It passed over several different villages, and was also accurately and distinctly heard. The day was foggy ; and though there was some thunder and lightning at a distance, it was not until the stone fell that an explosion took place, which alarmed all the adjacent country, and created, distinctly, a sensation that something very extraordinary had happened. A shepherd belonging to Captain Topham was within a hundred and fifty yards of the place where it fell ; George Sawden, a carpenter, within sixty yards ; and John Shepley, one of Captain Topham's farming servants, was so near that he was forcibly struck by some of the mud and earth that were raised by the stone dashing into the ground. In its fall the stone excavated a place nineteen inches in depth (seven inches of which were in a solid rock of limestone), and somewhat more than three feet in diameter, fixing itself so firmly that some labour was required to dig it out.

Another stone of considerable size fell in Scotland on the 5th of April 1704. A misty commotion was observed in the atmosphere, and nearly at the time of the stone falling, a report was heard as loud as if three or four cannon had been fired at a little distance. The report was succeeded by a violent rushing or whizzing noise ; and almost immediately afterwards the stone fell into a drain, in the presence of two men and two boys, splashing the water to a distance of twenty feet around. The stone, when dug out, was found to have sunk about eighteen inches into the earth.

On the 5th of November 1814, about half-past four o'clock in the afternoon, a dreadful peal of thunder was heard in the Doab in Persia, and was immediately succeeded by a shower of large stones, many of them from twenty-six to thirty pounds weight each. Several inhabitants of the adjacent country were present at the time, and not fewer than nineteen of the stones were collected.

On the 11th of December 1836, about half-past eleven o'clock P.M., with a clear sky, and S.W. wind, a fire-ball of uncommon size and brilliancy appeared over the village of Macao, at the entrance of the river Assu, in Brazil ; it immediately burst with a loud crackling noise, and a shower of stones fell within a circle of ten leagues. They fell through several houses, and buried themselves some feet deep in the sand. The weight of those picked up varied from one pound to eighty pounds. (*Poggendorf's Annals.*)

Professor Pallas, many years ago, discovered lying on the surface of a hill in Siberia, a mass of native iron, which weighed 1680 pounds. It was considered by the natives as a holy relic, and was believed by them to have fallen from heaven. M. de Bougainville, the French circumnavigator, discovered on the banks of the river La Plata, in South America, an enormous mass of native iron, which he calculated to have weighed about 100,000 pounds. And a mass of native iron, appearing in every respect to have been of meteoric origin, was some years ago discovered in the district of St. Jago del Estro, in South America. It was in the middle of a great plain, and had no rock nor mountain near it, and was calculated to have weighed about thirty tons.

The origin of the meteoric stones is involved in great obscurity. Some writers have imagined that they might be projected from distant volcanoes ; others, that they may have been detached from rocks, and had their substance considerably changed by a concurrence of natural causes ; others, that they may have been generated in the air by a combination of mineral substances ; and others, that they may have been projected from the moon. The latter was the opinion of La Place, the astronomer, who says that a mass, if thrown by the volcano from the moon, with the velocity of about a mile and a half per second, it will thence be projected beyond the sphere of the moon's attraction, and into the confines of that of the earth ; the consequence of which will be, that the mass must presently fall to the earth, and become a part of it.

#### THE COTTER READING HIS BIBLE.

The priest-like father reads the sacred page,  
How Abram was the friend of God on high :  
Or Moses bade eternal warfare wage  
With Amalek's ungracious progeny :  
Or how the Royal Bard did groaning lie  
Beneath the stroke of Heaven's avenging ire :  
Or Job's pathetic plaint and wailing cry,  
Or rapt Isaiah's wild seraphic fire ;  
Or other holy seers that tune the sacred lyre.

Perhaps the Christian volume is the theme  
How guiltless blood for guilty man was shed ;  
How He, who bore in Heav'n the second name,  
Had not on earth whereon to lay His head ;  
How His first followers and servants sped,  
The precepts sage they wrote to many a land ;  
How he, who lone in Patmos banished,  
Saw in the sun a mighty angel stand ;  
And heard great Babylon's doom pronounced by Heav'n's command.

BURNS.

## NARRATIVE OF A JOURNEY THROUGH PART OF THE NORTH OF NEW ZEALAND.



GROUP OF NATIVES OF NEW ZEALAND.

ACCORDING to my promise, I will now endeavour to give you some account of a journey which I lately made through the most interesting part of New Zealand, with a brief description of the places visited, and some remarks on the condition of the native inhabitants. In the description which I formerly gave you of a visit to various settlements on the coasts of this colony, I requested your attention to the map of these islands, and if you will again refer to it you will find that nearly in the centre of the Northern Island there is a great lake called the "Taupo," from which the river "Waikato" issues, and after flowing through the country to the northward of the lake, enters the sea on the western coast about 50 miles from Auckland. Between the Taupo and the Eastern coast there are many smaller lakes which are scarcely noticed in the maps, for no regular survey of the interior has yet been made: they are not very remarkable for the beauty of scenery, but as the country in which they are situated is in many places in a state of volcanic action, it presents much that is wonderful to the ordinary traveller, and objects of great interest to the natural-

alist: indeed, a journey to the Lakes and the Waikato is already looked upon as necessary to all who desire to have an acquaintance with the nature and capabilities of the interior of this colony; and the circuit we made will most probably become the grand tour, when facilities are given for travelling with ease and comfort. Hitherto very few Europeans have reached the "Taupo Lake," as they are unwilling to undergo the fatigue of travelling on foot, and submitting to the discomforts of such accommodations as native huts or small tents can afford. We found that walking day after day, for several weeks, was at times very wearisome. I will also freely confess that often, when seeking shelter for the night, amidst the smoke and filth of native huts, pleasing visions of snug English inns, with their cleanliness and comfort, used to come before us, and their contrast with our New Zealand fare and lodgings, afforded us matter for many jokes and humorous comparisons. This country is also far behind the islands of India in these respects. The New Zealander is not less hospitable than the Indian chief, but he has very different ideas as to what constitutes comfort. During our whole journey, we were never refused a share of such food and shelter as the natives have for themselves; and though we sometimes passed the night in one hut with the men and women—grandfathers, grandmothers, children, dogs and pigs—the best corner was cheerfully given up to the "pakeha" (stranger), and even there, lying altogether round the fire in the middle of the hut, and listening to their remarks and jokes, we were well amused with the study of human nature which the habits of these children of nature afforded us. But far more interesting was it to find that in such situations, and even by the fire of our encampments in the open wilderness, before wrapping themselves in their blankets for sleep, the New Testament was invariably drawn from a bag which some old man or young teacher carried, a hymn was sung, the glad tidings read with reverence, and prayer offered up to the Father of all, with as much apparent earnestness and devotion as may be observed in any little assembly of Christian worshippers. We could not but feel touched by the simple religious observances of these once savage people; and though unarmed and distant from any of the usual protections of life and property, we felt ourselves as secure and slept as soundly as if we had been in the midst of a fortified city.

I cannot tell how deep their religious impressions may be, but I can declare that in a journey of several weeks over a populous part of the country, I never saw morning and evening devotion omitted—I never saw the Sabbath-day desecrated by Christian natives; I saw no quarrels—no ill-treatment of each other; nor had I the smallest article stolen from me, though many things which they desire were exposed at every halting place. They are generally blamed for their avarice, and, truly, they can drive a hard bargain. We had much reason to regret the disposition which they always evinced to get as much of our money as they could for the services they rendered in conveying our baggage; but I fear that they have been taught this lesson in some measure by some of our own race, who have often paid them unfairly, and cheated them in their dealings. This practice the natives have discovered, and are now always on their guard against imposition. Mistrust of Europeans, added to a natural acquisitiveness, certainly gives them in this respect a very unamiable appearance, and is, I repeat, much to be regretted, though it is very probable that their desire to possess property may be a means of forwarding their civilization.

Perhaps the greatest proof of the inestimable good which has been done to this people is the almost complete cessation of war amongst the various tribes who were, in days of heathen darkness, scarcely ever at peace. Almost every remarkable spot of ground is pointed to by old men as having been the scene of some terrible conflict or stealthy attack, and cold-blooded massacre, with the consequent horrors of cannibalism. Contrast such times with their present condition, and every man who has a spark of love for his fellow-creatures must admit that the Missionaries have been, indeed, messengers of glad tidings and peace to this land—once so filled with the habitations of cruelty.

Having made these few preliminary remarks, I will now proceed to the narrative of our journey, upon which we set out in the month of August 1849. At this season the weather is usually too wet and cold for travelling; but circumstances forced me to depart so early in spring, and fortunately we had not much bad weather to complain of. Mr. \* \* \* \* was desirous of accompanying me, and I had much reason to congratulate myself in having an agreeable companion. Our first object was to reach "Tauranga"—a harbour which you will see marked in the Bay of Plenty. For this purpose we embarked on board a small vessel, and arrived there after a short and pleasant passage; on our way we passed Mercury Bay, to which Captain Cook resorted. The arrival of that great navigator is said to be remembered by an old chief yet alive.

The entrance to the harbour of Tauranga is narrow and well marked by a high conical mount on its southern side. The sheet of water inside is very spacious, but so shoal and full of sand-banks as to render the anchorage very limited indeed. There are several villages on the shores inhabited by natives who possess some small schooners, with which they maintain a coasting trade in pigs, potatoes, Indian corn, and flax, with the capital. There are two Mission stations—one belonging to the Church of England, presided over by the venerable Archdeacon Brown; and the other a Roman Catholic station. Both of these stations have a pleasing appearance from the water, especially the latter, from there being a spire to the Mission chapel. The operations of the Missionaries are not confined to this locality only; but they have a district to care for, and a great extent of country to travel over during their visitations.

We were kindly received and most hospitably entertained at Tauranga by the Archdeacon, the Rev. P. C. Davies, and their families; but we found more difficulty than we anticipated in procuring natives to carry our baggage and provisions. The demands made were so exorbitant, that Mr. Brown was so kind as to send his own men with us to the next station, rather than suffer us to submit to imposition.

I would strongly recommend intending tourists in New Zealand to provide themselves with natives at Auckland, and to hire them for the whole journey, by which means they will be spared much trouble and delay, as well as expense; for the inhabitants of native villages, if willing to go at all, do not like forming hasty engagements; and while the European traveller is fretting with impatience to move on, they lie wrapped in their blankets, and making their demands and stipulations with perfect calmness and most provoking deliberation; neither are they slow at taking advantage of the traveller's impatience or perplexity, and raise their price proportionably. But once fairly on the road, they are admirable guides and companions—I cannot say servants, for they have no notion of such a thing. They consider themselves friends of the pakeha, who is taken

under their protection, and whose effects, consequently, they are willing to carry for a time, but in every way they are as independent as American citizens, and take care to show their feelings by the remarks they make on terms of the most perfect equality. Indeed, the New Zealanders are complete republicans, even the highest chiefs have little direct authority, although they have considerable influence, especially where they wish to induce their tribes to do mischief.

The slaves (captives or descendants of captives of war) are kept in subjection, but many of them have lately been liberated by Christian chiefs. I was told by a Missionary that Te Wero Wero, the great chief of the Waikato, may be seen sitting by the side of the lowest slave at church or school, and answering questions from the catechism with much humility.

From Tauranga we walked along the sea-beach to Maketu, sixteen miles to the southward, and on arriving there in the evening were most kindly welcomed and entertained by the resident missionary, the Rev. Mr. Chapman. Maketu has a small river accessible to coasting craft. The village is on an eminence at the entrance, and is strongly fortified by palisades to resist musketry or assault by storm. Circumstances led the Government in 1843 to form plans for the attack of this pah or stronghold, and the officer of Royal Engineers who examined the place, was much astonished at the admirable skill the natives had shown in choosing their position and making the defences. A chief of the place with some of his people had made an inroad upon the cultivations of their enemies, the natives of Tauranga, and were driven off and dispersed by the latter; a young lad related to the chief of Maketu being killed or drowned in the affray. Some days after, Tongaroa the chief, who had been hiding in the woods, made his way to the beach, where he saw a small craft taking in wood and water, and solicited most earnestly to be taken on board. The Europeans kindly consented, and whilst procuring their supplies on shore had the mortification of seeing their little vessel moving off under charge of Tongaroa, who had quietly slipped the cable. The ungrateful savage made his way to Maketu, where he was joined by another chief and a party of the tribe, armed and prepared



PORTRAIT OF A NEW ZEALAND CHIEF.

to revenge the death of their young relation. For this purpose they crossed to an island near the coast, inhabited by natives of the same tribe as their enemies of Tauranga. By keeping the greater number under cover, and those on deck dressing themselves like Europeans, they succeeded in inducing the natives of the island to come alongside in a canoe, when a deadly volley was fired upon them by those on board the schooner. Several were killed, and the dead bodies feasted upon on their return to Maketu. No efforts of the Missionary could effect the prevention of the cannibalism, and the presence of the troops of Tauranga alone induced them to give up the stolen vessel. I saw and conversed with both of the chiefs engaged in this affair. They have been very well behaved since, but are little to be trusted.

The country round Maketu is level, and the soil apparently fertile to the foot of the hills, which look as if they had once been on the sea-shore, the flat lands of Maketu resembling a great bay elevated by volcanic agency. In days to come these fertile lands may be covered with cultivation and pleasant hamlets, nor is it too great a stretch to imagine that instead of the present dirty native pah, a bustling town may be built at the entrance of the river.

We encamped for the night on the sloping lands approaching the hills, several travelling natives joined our party, and, after prayers, continued talking as they lay by the great log fire until late in the night. We made a bed of fern in the tent, on which we spread our blankets and slept most comfortably until the dawn, when I roused the party and had a fire lighted to make coffee. The morning was cold but dry and clear, the most agreeable weather for travelling in. As we ascended the hills we obtained pleasing views of the lands we had passed through, and the sea with its several islands near the coast, the most remarkable of which is White Island, a volcano, from which vapour is continually ascending. We halted for breakfast by the side of a stream where we made our toilet, and highly enjoyed the food for which cool air and exercise had given us an excellent appetite. After reaching the summit of a range of hills we descended through a forest to the valleys on the inland side, and in the evening reached the bank of the first lake called Roto Iti, and embarked in a canoe which our natives paddled with great swiftness across the moonlit water to our intended halting-place on the further side. The arm of the lake where we embarked looked very much like that of Loch Katrine in Scotland, when it is first seen in issuing from the Trossachs' Glen. Whilst passing through a dense forest I found some very fine specimens of ferns, and my companion shot some large and fat wild pigeons, which are excellent eating; and as there are plenty of wild ducks on the lakes, and large prawns at the bottom, we had a pleasant prospect of good fare on our route.

Near the Roto Iti we came upon the encampment of an excellent old chief with his sons and followers. I had been of some service to them once at Auckland; they seemed much pleased to see me, and were ready to serve us in any way in their power. I had often occasion to be surprised at finding myself recognised by natives who had visited the capital, and of whom I had no recollection. The shores and bays of Roto Iti are steep and well wooded. We passed the Sunday in a neat cottage built by the natives for an invalid European, who had most kindly written to them to give it up for our use. This cottage was built by the side of a stream of hot water, which issued from the rocks, and being dammed up, formed a delightful bathing place; we indulged very freely in the luxury which this afforded,

and found ourselves all the better for the indulgence, though the effect of these baths is temporarily weakening.

From Roto Iti to Roto Rua, the second lake, the distance is only a few miles, which we got over before breakfast. The intervening country is mostly composed of volcanic ashes and other débris, having a sterile and gloomy appearance. Midway there is a valley called Tiki Tera, where several horrible black boiling springs rise from the white-looking treacherous ground about them. Great care must be taken in approaching these awful caldrons over the crust of earth which separates them from the surrounding country. The water is said to be highly medicinal. The first view of Roto Rua is pleasing,—a high island in the centre forming a picturesque object,—but this lake is not otherwise very interesting in point of scenery. We passed a day or two at the Mission station, which is occupied the greater part of the year by Mr. Chapman, who first formed it amidst war and difficulties of no ordinary kind. His orchard is extensive, and produces in the season abundance of fruit. Whilst we were there, the peach-trees were in blossom, though the ground was every morning covered with hoar-frost and ice. The most remarkable object on the Roto Rua is the native village of Ohinimutu, opposite Mr. Chapman's station; we reached it by walking round the shore, for the wind was so high as to make it dangerous to cross the lake in a canoe. This singular habitation is generally shrouded by vapour, and to our great surprise we found that the ground on which the village is built was perforated everywhere with boiling water holes; in the narrow lanes between the houses we required to walk with care to avoid stepping into them. The crust of earth sounds hollow, and seems like ice after thaw, ready to give way under the feet of the passenger: indeed, some black posts are to be seen projecting above the water in the lake which once formed a part of the stockade of the village: yet this dangerous volcanic ground, which people in other countries avoid, is chosen by the natives for the comfort and convenience which the boiling water affords them. Almost every hut has its natural boiling caldron, in which the food is cooked, and there are several larger springs which are common to the inhabitants, and seem to be the resort of the gossips of both sexes: from these springs the boiling water is led off to small tanks lined and paved with volcanic stone, in which men, women, and children are seen at all hours enjoying the luxury of the warm bath.

In a valley on the land side of Ohinimutu there are several ponds of hot water, and numerous steaming holes and geysers. On our arrival, we inquired, as usual, for the native teacher, and found Zachariah—for so he is named—a most courteous and well-bred gentleman; he gave us a house to sleep in, and potatoes to eat—but, far from looking for recompence, he actually kept out of the way when we were leaving the village; so that we supposed he was absent, but we soon perceived him in the rear kicking some dogs, and cuffing some children that were inclined to annoy us. He condescended to smoke one of our cigars, and we made a trifling present to his mother and another old lady, who had swept and prepared our lodging.

From Roto Rua we took our way to Lake Tarawera, a distance which is easily got over in one day. After walking for some hours through narrow valleys between hills covered with long coarse grass and fern, we came to the shores of a very pretty lake, called Okareka, and embarked in a small canoe by which we passed up the lake, and shortened the distance considerably. The shores of Okareka lake are very picturesque, and there is an

island in the centre on which a native village is situated and a school-house is conspicuous. A short walk from the further end of this small lake brought us in sight of Tarawera, surrounded by high hills, and at the southern side a lofty mountain whose jagged summit and bare sides have more of sternness and grandeur than of beauty in their appearance. We walked along the right bank to the Church Mission station, which is at a village on a peninsula projecting into the lake. This settlement has a very pleasing appearance as it is approached: on our arrival we met with a most kind reception from the Resident Missionary, the Rev. Mr. Spencer. The natives who had accompanied us so far, gave such a report of their success in exacting high pay, that when we wanted a canoe to pass up the lake next day, the demands made were most exorbitant. Mr. Spencer has been accustomed to live very independently of native assistance, and on this occasion he did not hesitate a moment to take a paddle and jump into a canoe—we followed his example, and with a solitary volunteer, an old chief, sped across the lake, and soon obtained assistance at another village. Our object was to reach a very remarkable lake called Roto Mahana, or the Hot Lake; by passing from Tarewera through a narrow strait into Areki Lake, and landing at its further end, a short walk brings the traveller to the shore of the Roto Mahana. The scenery is gloomy: but the objects of interest, for which the lake is celebrated, are wonderful and beautiful beyond description. Steam is seen issuing from numerous fissures in the hills—some terrible caldrons and a geyser are continually heaving, spouting, and roaring on the eastern side—but the real wonders of this lake are two boiling springs, one on either side, which have issued from the hills at a considerable elevation, and formed ponds or lakes of boiling water. The carbonate of lime deposited by the spring has formed a crust round these fairy-like fountains, which gives them the appearance of being enormous basins of the purest marble. The colour which the water assumes in the basins is that of the deepest azure, most charming to gaze upon, and as it flows over the edge of the basins and pours down into the lake, it deposits its mineral substances held in solution in the form of terraces, which look like gigantic flights of marble steps to the fountains above—on one side of the lake they are of various hues, but on the other the deposit is coloured by ferruginous matter, which has given the terraces a pink or roseate appearance. Each step or terrace is about twenty feet broad, and by the falling of the water hollowed out into pools, which look like great shells lined with pearl. These pools form luxurious baths, the temperature varying with the height of the terrace. We plunged into one of them about half way up to the fountain, and could scarcely bear to leave it again, so delightful is it to swim in clear warm water, in a bath which the most gorgeous monarch might envy. We returned to the Mission station before dark, exceedingly pleased with our visit to Roto Mahana, and grateful for Mr. Spencer's guidance, without which we would most probably not have seen half its wonders; and like other travellers who were less fortunate, have left it with a far lower idea of the natural curiosities and beauties for which it is so justly celebrated.

(*To be continued.*)

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WINGED PRIEST.

THERE is, however, another object commonly present in scenes representing religious homage, and that occupying a position immediately before the worshipper; or, if there be two associated worshippers, then between

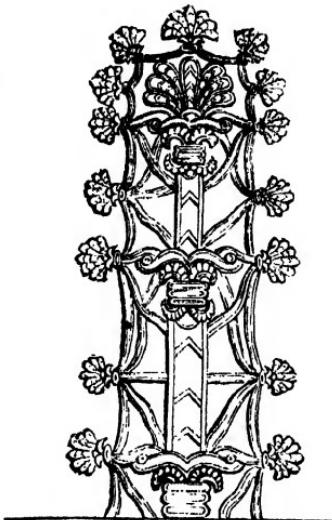
them as they stand face to face. It is commonly called "the sacred tree," and appears to have been originally intended for the long twining stems of the honeysuckle trained into a regular form, and studded with its graceful flowers.

The king is frequently represented as worshipping before the sacred tree, beneath the Feroher or guardian deity in the air. He sometimes stands, sometimes kneels on one knee, with open hands, one of which is uplifted as in prayer. Occasionally two kings are represented, one on each side of the tree, towards which they look; but as they are the exact counterparts of each other in dress, countenance, and position, they may be supposed to be merely a duplicate image of the same person and action. Behind the king when thus engaged, stands a figure of singular appearance. He is clothed in a long fringed robe, sometimes elaborately embroidered, and commonly wears a round cap, embraced by one, two, or three pairs of horns, formed like those of a bull, which, springing from each side, curve round to the front, where

the points of all nearly meet. The horns have this peculiarity, that they do not project from the head, but continue in contact with the cap through their whole length. Sometimes the summit of the cap is plain, at others it is finished by an ornament resembling a trident or a fleur-de-lis.

The figure is further distinguished by two pairs of eagle-wings, which spring from the shoulders, one pointing upward, the other downward. These four wings seem characteristic of the sacred person before us, by which he may always be identified; some or other of his accompaniments are from time to time lacking, according to the occupation in which he is engaged; but the wings are, with scarce an exception, always present, though sometimes only one of each pair is depicted.

We think there can be no doubt that these characters are intended to represent the priestly office. Figures so portrayed attend the king when he worships before the sacred tree, and hold sacred symbols; the most common of which is the cone of the pine-tree elevated in the right hand, and a little basket suspended in the left. Occasionally the cone is exchanged for a branch bearing pine-cones and flowers alternately, for a branch of honeysuckle, for a bunch of pomegranates, or an ear of barley. And instead of the basket, the priest sometimes carries a mace, or bears on his left arm a goat, a fallow deer, or a lamb. Sometimes one on each side of the tree holds up a goat in the air by the hind leg: at another time one carries a wide flat tray on his head; and at another he holds two ostriches by the necks. Sometimes two priests, without the king, are seen engaged in worship before the sacred tree, presenting the pine-cone and basket, or kneeling on one knee with outspread hands; and occasionally they surround the king, with the same sacred emblems, in company of the eunuchs and officers of the court when he sits in state on the royal throne.



SACRED TREE.

Priests are frequently represented as holding or slaying imaginary or symbolic animals;—perhaps a sphinx, which the priest holds by one fore paw raised high, and prepares to strike with a sword. It is observable that this design, which occurs in the embroidery on a robe, answers to another, almost exactly the same, except that the priest is without wings.



VULTURE-HEADED PRIEST.

In one instance, figured in the embroidery of the royal robe, a priest is seen holding in each hand a lion by one of its hind legs, while the animals are each seizing with talons and teeth a bull by the throat. The figure has the peculiarity of being drawn in full face instead of profile, and the head, which has no cap, is furnished with two crescent horns.

Generally the winged priests are bearded men; but in one or two instances beardless figures are so represented, which, from the contour of the features, seem not to be eunuchs, but women. Two of these are seen over the sacred tree, robed, capped, and winged similar to the priests, and bearing daggers stuck in the girdle; each holds the right hand open and elevated, and grasps a rosary or garland in the left. Another holds two sphinxes by one hind leg in each hand, which turn their heads to look at her. Another is encircled by a sort of chain of intertwined bands, which she

holds up in her hands ; it seems to be fastened to fetters around her wrists and ankles, and is attached to each wing. These may possibly be eunuchs after all.

We feel inclined to associate with the sacerdotal office, also another figure very common in the sculptures, which has attracted considerable attention,—the man with the head of a vulture. It was at first thought that this represented the Nisroch, in whose temple Sennacherib was slain, after the miraculous destruction of his army. (2 Kings xix. 36, 37.)

This conclusion, which originated in the supposition that Nisroch is derived from *nesher*, *an eagle*, is now held to be erroneous. The vulture-headed figure, in every other respect than the head, agrees with the priests already described ; it wears the same garments, carries the same symbols, the cone and basket, and performs the same actions, whether of worship or of the slaughter of symbolic animals.

We would venture to suggest the probability that both the wings and the vulture-head were parts of the priestly dress, so formed as to be put on or off as occasion required.

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#### CONSCIENCE.



A LITTLE boy called Jem Roberts, having been set to weed in a gentleman's garden, observing some very beautiful-looking fruit on a tree which grew upon a wall, was strongly tempted to pluck one.

"If it tastes but half as nice as it looks," thought he, "how delightful it must be!" He stood for an instant gazing on the tree, while his mother's words, "Touch nothing that does not belong to you," came vividly to mind. He withdrew his eyes from the tempting object, and with great diligence pursued his occupation. The fruit was forgotten, and with pleasure he now perceived he had nearly reached the end of the bed which he had been ordered to clear. Collecting in his hands the heap of weeds he had laid beside him, he returned to deposit them in the wheelbarrow which stood near the peach tree. Again the glowing fruit met his eye, more beautiful and more tempting than ever, for he was hot and thirsty. He stood still—his heart beat—his mother's command was heard no more—his resolution was gone! He looked around, there was no one but himself in the garden. "They can never miss one out of so many,"

said he to himself. He made a step, only one, he was now within reach of the prize ; he darted forth his hand to seize it, when at the very moment a sparrow from a neighbouring tree, calling to its companion, seemed to his startled ear to say, “ Jem, Jem.” He sprung back upon the walk, his hand fell to his side, his whole frame shook ; and no sooner had he recovered himself, than he fled from the spot.

In a short time afterwards he began thus to reason with himself :—“ If a sparrow could frighten me thus, I may be sure that what I was going to do was very wicked.”

And now he worked with greater diligence than ever, nor once again trusted himself to gaze on the fruit which had so nearly led him to commit so great a fault. The sparrows chirped again as he was leaving the garden, but he no longer fled at the sound.

“ You may cry, Jem, Jem,” said he, looking steadily at the tree in which several were perched, “ as often as you like—I don’t care for you now ; but this I will say—I will never forget how good a friend one of you has been to me, and I will rob none of your nests again.”

#### ON CAPITAL.

WE have seen that a rich man who spends on himself his income of 1000*l.* or 10,000*l.* a-year, does not diminish the wealth of the whole country by so much, but only by what he actually eats and wears, or otherwise consumes, himself. The rest he hands over to those who work for him or wait on him ; paying them either in food or clothes, or, what comes to the same thing, in money to buy what they want. And if he were to give to the same persons what he now pays, leaving them to continue idle, there would not be the more food or clothes in the country ; only, these people would sit still, or lounge about and do nothing, instead of earning their bread.

But they are the happier and the better for being employed instead of being idle, even though their labour should be only in planting flowers, or building a palace to please their employer’s fancy.

Most of the money that is spent, however, is laid out in employing labourers on some work that is profitable ; that is, in doing something which brings back more than is spent on it, and thus goes to increase the whole wealth of the country. Thus, if instead of employing labourers to cultivate a flower-garden, or build me a summer-house for my pleasure, I employed them in raising corn, or building a mill to grind it, the price of that corn, or the price paid for grinding by those who bring corn to the mill, will be more (if I have conducted the business prudently) than what I had spent on those works. So that instead of having parted with my money for ever, as when it is spent on a pleasure-garden or summer-house, it comes back to me with addition. This addition is called profit ; and the money so laid out is called capital.

A man who lays out his money in this manner may do the same over again, as soon as it comes back to him ; so that he may go on supporting labourers year after year. And if he saves each year a part of his profit, and adds it to his capital, as a thriving farmer or manufacturer generally does, he will be continually employing more and more labourers, and increasing the wealth of the country. He himself, indeed, is, perhaps, not thinking of his country, but is only seeking to enrich himself : but this is the best and surest way he could take for enriching his country ; for, every

man in the nation who adds to his own wealth, without lessening the wealth of others, must, it is plain, be adding just so much to the wealth of the nation. Sometimes, indeed, one man gains by another's loss ; and then, of course, nothing is added to the welfare of the country. If a man gets rich by gambling, or begging, or robbery, others lose at least as much as he gains ; but if he gets rich by his skill in farming, or manufactures, or mining, all that he gains is so much added to the wealth of the whole country, since it is not lost by any one else.

Many persons dispose of their property in this way, though they are not themselves engaged in business, but lend their money to others, who are. Suppose you were a labouring man, and had 100*l.* left you as a legacy : or had saved up that sum from your earnings ; you might not know how to trade with the money to advantage ; and if you keep it in a strong box, for the use of your children, you would not be the better for it all your life ; and at the end of twenty or thirty years, your children would find just the same sum that you first put in. Or, if you took out 5*l.* every year to spend, at the end of twenty years it would be all gone. But you might lend it to some person engaged in business, who would give you a security for the repayment of the principal, as it is called, that is, the sum borrowed, and would pay you 4*l.* or 5*l.* every year for the use of it ; which is called interest. This he would be glad to do, if he knew that he could employ this 100*l.* in buying materials, and paying workmen to weave cloth, for instance, or make tables and chairs, which would bring in, by the end of the year, 110*l.* ; for out of this increase of 10*l.*, after paying you 5*l.* for the use of your money, he would have gained 5*l.* for himself.

In this way great part of the capital that is engaged in trades and manufactures is employed by persons who are not themselves the owners of it.

The more capital there is in a country, the better for the labourers ; for the poorer the master is, the fewer labourers he can afford to employ, and the less ~~sure~~ he can be of being able to pay them.

Suppose you were a poor man, in a newly-settled country, and asked your neighbour to help you to dig a piece of fertile ground, promising him a share of the produce for his pains ; he might say—"I have nothing to live on in the mean time ; if you want me to dig for you, you must pay me daily wages." But if you have nothing beforehand, except bare necessaries for yourself—that is, if you have no capital—you cannot pay him till harvest. Your land, therefore, will remain half-tilled : and he will be forced to go into the woods to seek for wild berries, or to hunt and fish, to provide himself food. Indeed, all\* would be forced to begin in this manner, if you suppose a number of men left to themselves, even on the most fertile land, without any property to set out with—that is, without capital. They would have great difficulties to struggle against for a long time ; but when they had advanced some way in acquiring wealth, they would find it easier to obtain more.

For, as it is, you may observe that wealth is always obtained by means of wealth—that is, it is gained by the help of capital ; without which labour can hardly be carried on. Corn is raised by labour ; but a previous stock of corn is needed, both to sow the ground, and to maintain the labourer till the harvest is ripe. The tools with which he works are made with tools. The handle of the axe with which he cuts wood is made of wood ; the iron of it was dug from the mine with iron instruments ; and it is the same with almost every kind of labour. You may judge, therefore, how difficult and slow men's first advances must have been, when they had

to work with their bare hands, or with stakes and sharp stones for their tools. Accordingly, in countries that are ill provided with capital, though the inhabitants are few in number, and all of them are forced to labour for the necessities of life, they are worse fed, clothed, and lodged than even the poorest are in a richer country, though that be much more thickly peopled, and though many of the inhabitants of it are not obliged to labour with their hands at all.

The money, food, and other things which a farmer spends on the labourers and on the horses which cultivate his land, or a clothier on his weavers, is called circulating capital ; because he parts with it from time to time, and it returns to him as in a circle, in the shape of corn or cloth. The farmer's barns, ploughs, carts, and horses, and the clothier's looms and warehouses, are called fixed capital ; because they bring in a profit, not by being parted with, but by being kept as long as they are fit for use.

Any new kind of tool or machine, by enabling a few men to do the work of many, is likely, when first introduced, to throw several men out of employment, but, in the end, it almost always finds employment for many more. Thus, for instance, when the art of printing was first introduced, many who used to gain their living by copying, were thrown out of employment, because a very few printers could produce as many copies of a book as several hundred writers. But, in a short time books being thus rendered so much cheaper, many more were enabled to buy them ; and many hundred times as many printers were employed as there were copyists before. And the same thing takes place in almost every kind of machinery.

There is one way of employing capital which people are apt to murmur at, as if it did them an injury, though there is none that does more important service to the public. A man who deals in corn or other provisions, is, of course, watchful to buy them up when they are cheap, and to keep them till they are dearer, that he may sell them at a profit. Now, an unthinking person is apt to complain of corn-dealers when bread is dear, as if they were the cause of scarcity ; but, in truth, it is they that preserve us from being absolutely starved whenever there happens to be a scanty harvest. Not that a corn-dealer is thinking of benefiting the public ; he is only thinking of gaining for himself a profit on his capital, like any other tradesman ; but the way he takes to secure this profit, which is by buying up corn when it is cheap, and selling it when dear, is exactly the way in which the plentiful crop of one year may supply the defect of another, so that there may not be first waste and then famine, and in which a short supply may be made to hold out.

When the captain of a ship finds his provisions run short, so that there is not, suppose, above three weeks' provisions on board, and his voyage is likely to last four, he puts the crew on short allowance ; and thus, by each man's submitting to eat only three-fourths of his usual quantity, the provisions hold out. But if the crew should mutiny when they felt hungry, and insist on having their full allowance, then, by the end of the three weeks, all would be consumed, and they would perish with hunger. Now it is plain that the same would be the case with the whole nation, if, when the harvest fell short, all were to go on at the ordinary rate of consumption.

Suppose such a failure in the crops that all the corn in the country was only enough for three-quarters of a year, according to the common rate of consumption, it is plain that if all men went on eating the usual quantity, there would be nothing left for the last three months, and the most dreadful famine would prevail.

How is this to be prevented, as there is no captain to put people on short allowance ; and it is not to be expected that all should agree, each to stint himself for the public good ? If corn remained at the usual price, all would continue to eat the usual quantity till there was none left. But the prospect of a scarcity causes farmers, and millers, and others, who have capital, to keep what corn they have by them, in expectation of a higher price, and to buy up what they can, at home and from abroad ; and as they refuse to sell it except at an advanced price in proportion to the scarcity, the dearness of food forces people to be more saving. In this way the store of provisions is husbanded in the whole country, just as on board a ship, and is made to last till next harvest ; and thus by suffering a certain degree of hardship, the people are saved from perishing by famine.

It is curious to observe, how, through the wise and beneficent arrangement of Providence, men thus do the greatest service to the public when they are thinking of nothing but their own gain. And this happens not only in the case of corn-dealers, but generally. When men are left quite free to employ their capital as each thinks best for his own advantage, he will almost always benefit the public, though he may have no such design or thought.

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#### SIR PHILIP SIDNEY.

DIED 1586. AGED 32.

THIS ingenious writer, and accomplished officer and statesman in the reign of Queen Elizabeth, was the son of Sir Henry Sidney, of Penshurst in Kent.

This great man, being sent with English troops to assist the Dutch against the Spanish, received a wound in the thigh from a bullet at the battle of Zutphen, of which he died. "As he was retiring," says his biographer, "from the field of battle, pale, languid, and thirsty, with excess of bleeding, he asked for water to quench his thirst. The water was brought, and had no sooner approached his lips, than he instantly resigned it to a dying soldier, whose ghastly countenance attracted his notice, saying, 'This man's necessity is still greater than mine.' "

Sir Philip Sidney was an illustrious patriot and pious Christian. A soldier dying a Christian death is a noble and animating spectacle. The military character is then really great, when it is exalted by the genuine virtues of a Christian. Sir Philip retained a calm and undisturbed spirit, and made a public confession of his faith to the holy ministers of religion who encircled his bed, to men eminent for their goodness and edifying piety. This confession is said to have been such as no book but the heart could truly and feelingly deliver. They afterwards accompanied him, at his own earnest request, in a devout prayer dictated by himself and uttered with much energy and affection, the free and fervent effusion of a heart deeply penetrated with a true sense of sin. "His sins," he said, "were best known to himself, and out of that true sense he was more perfectly instructed to apply the eternal sacrifice of our Saviour's passion and merits to himself."

In the course of his illness he introduced a topic of conversation, the most serious and sublime that can engage the attention of man, the Immortality of the Soul. The day on which he died, he called for music to compose his disordered frame. His mind was soothed and tranquillized, anticipating, as it were, those delightful strains of celestial melody, with

which the angelic choir encompass the throne of God. With a patient submission to the Divine will, he bade adieu to his most afflicted brother, in words which deserve to be engraven in letters of gold. "Love my memory; cherish my friends; their faithfulness to me may insure you that they are honest. But above all, govern your will and affection by the will and word of your Creator, in me beholding the end of this world with all its vanities." He died in the arms of his dear friend, Mr. William Temple.

**REFLECTION.**—If we thought seriously and practically on the immortality of the soul, our vain desires, worldly pleasures, and sinful courses would be checked, and our attention directed to that fixed state of being, in which an eternity of pain or happiness must be our portion for ever.

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#### NARRATIVE OF A JOURNEY THROUGH PART OF THE NORTH OF NEW ZEALAND—(*continued*).

A TRAVELLER may pass several days pleasantly at Tarewera, making excursions to various pretty spots near—amongst others a water-fall or stream which issues from a neighbouring lake and falls into Tarewera. The fall is hidden by fine trees, and the banks of the stream below it are varied and picturesque. The native owner of land near the fall, who acted as our guide, lost my pencil, at which he was greatly afflicted, and seriously offered me possession of the cascade itself, as well as the wood immediately about it, as payment for his neglect.

On Sunday Mr. Spencer went to hold service in another village, and left his principal native teacher to officiate at the station chapel. He conducted the service, and preached a short sermon with considerable eloquence; his voice was deep and well toned, and the responses of his hearers were made in solemn unison. In the evening I had some conversation with the teacher and other natives as they sat on the ground near the church, about the conduct of his countrymen in holding out for such exorbitant payments; and I expressed our determination to send most of our effects back to the coast, and to carry the rest on our own backs rather than submit to such imposition; his wife, a fine-looking woman, accustomed to European habits, from having lived in Mr. Spencer's house, was exceedingly indignant at our being detained after offering a fair payment of 2s. per diem to each man, and perhaps to her we were chiefly indebted for being able to get a party on the following morning. Our first day's journey from Tarewera was a very short one, only to Roto Kakahi, another lake about six miles off. The natives live on an island in that lake, and were very civil to us; they had abundance of muscles and a delicious tiny fish called Inanga, of which they gave us a supply. The leading men spent the evening near us talking about the reported murder of a European who lived not far off. They spoke with disgust of the horrid deed, and expressed their determination to hold a committee of chiefs for the purpose of considering the best means of bringing the supposed murderers to justice.

To us who were entering upon a wild part of the country, beyond the usual visits of the Missionaries, this news was not cheering, more particularly as a young chief came into our hut alone, and after closing the door, told us in a low voice to be on our guard, for his countrymen in the "Taupo" country were not to be trusted, and it would be a source of grief

to all right-minded natives to hear afterwards that we had been either robbed or murdered. Though we were not inclined to despise his caution, yet his fears did not disturb our rest, for we felt assured that if any real danger of violence from the natives was to be apprehended, the good Missionaries whom we had visited would not have failed to warn us of it.

According to our custom we were on our way for "Taupo" soon after daybreak. The country we passed over was generally hilly, though our path led us through several extensive and fertile valleys, totally destitute of inhabitants; vapour was seen rising from hills and streams, one river which we crossed was quite hot, and our natives seemed to delight in every opportunity of enjoying a warm bath.

At sunset we entered an extensive valley bounded on one side by a range of steep hills, burning in many places. The natives chose the immediate vicinity of some boiling mud holes as the best place for encamping; we yielded unwillingly to their anxiety for a warm berth, though the ground on which our tent was pitched seemed to be a mere crust of earth over an incandescent substratum. Before we had finished supper it became so hot that we could not sit upon it, and made a hasty retreat to another position. The natives, however, took up our vacated ground, and next morning declared they had passed a pleasant night, sleeping comfortably without shelter, though on terra firma there was a sharp frost. Soon after leaving this valley we came upon the great river Waikato, rushing on its course from Taupo to the sea. We crossed it in a small canoe, which was found on the bank, and walked by the river side until we came to a fine rapid, where we lighted our fire and enjoyed breakfast amidst wild but beautiful scenery; and then left the river for a time to pursue a nearer course towards the great lake from which it issues. Hills, valleys, and forests are seen everywhere, but no traces of inhabitants or cultivation. At length we came to a wretched hut or two by a hot spring, where we found only a few women, the men being away on some expedition; but the sight of their cheerful and friendly faces was pleasing, for we had been nearly three days without meeting any human being.

Whilst at that place a singular case of nervous affection or disease showed itself. When approaching the huts one of our natives told me not to whistle, as one of the women was ill; but with my imperfect knowledge of the language I did not, I suppose, clearly understand his meaning, nor did I think of mentioning it to my companion, who inadvertently began to whistle an air as he sat on a stone making his toilette. Instantly one of the poor women fell down in terrible convulsions, bleeding profusely at the nose, and had to be carried off to a retired hut, as they said she would not recover for some hours. We were excessively grieved at the circumstance, and the man who warned me did not spare his reproaches, but the other women tried to remove our concern, and the present of a little tobacco sent to the sufferer seemed to be satisfactory to all parties.

After this we reached Hapua, a small village in a wood, where we spent the night. The inhabitants were absent, but we did not hesitate to take possession of a hut for sleeping accommodation.

After leaving "Hapua" we passed some good land in a valley, the soil of which is much mixed with pumice and other volcanic debris, and made for a clearing that we saw on a forest-covered range of hills. An old man and woman who saw us coming, shouted out directions to the path through the wood, and at the same time, according to the usual custom, began to prepare food for the travellers whom they had despatched at a distance.

We ascertained that the old man had a store of blankets, which he kept for sale, acting as a country agent to Petuoni, the brother of Walker, who resides near Auckland, and making his returns in pigs, which are sent to the capital.

After breakfast we passed on through the forest, and at noon reached a pah of some size on the summit of the range, from which we got the first sight of Tongariro Mountain, towering above the clouds, and brilliantly reflecting the sunshine from its snow-covered sides and peak. The natives of this pah are Roman Catholics, and seemed inclined to take liberties with us. They insisted on our remaining there for the night; and our natives, whatever they might have felt, did not show any reluctance to comply. I therefore took one of the burdens, and prepared to get it on my back, declaring my determination to move on, whether they did or not. My companion did the same, and the natives no longer hesitated to follow—glad themselves, perhaps, of an excuse for leaving the most villainous-looking set that we met with on the whole journey. At sunset we saw a cloud of vapour a great way off, near to which we knew a chief, whom we desired to visit, had a temporary residence. We had walked all day, and my knee was slightly sprained, but still we pushed on, over hills, dales, and ravines, and reached Pohipi's huts about nine o'clock. He was encamped by the side of the Waikato, close to a hot spring, which formed a warm bath, within twenty yards of the cold clear water in the river.

We found Busby, or Pohipi, as he is called, an excellent fellow. He is chief of the country at the northern end of Taupo Lake, has considerable influence, and was most friendly to us. There being no rapids on the river from its source to where we encamped, the chief offered to conduct us on in his canoe; we set off very early, and reached the lake to breakfast. The weather was fine and the sky clear, which enabled us to see the lake and the great mountain, in all their beauty. After paddling and walking for some miles on the western shore, we ascended the hills near Pohipi's principal pah, called Jerusalem, and had a splendid view of the whole of this inland sea. The shores are unfortunately bare of trees, which gives the land a somewhat sterile appearance; but the water, the islands, and above all, the glorious mountain, form a magnificent scene. Tongariro is said to be about 10,000 feet high, and half covered with snow. The peak is conical, and appears flanked by two shoulders, which slope gradually to the base. Vapour is continually rising from the cone, and resting in a white cloud on the side of the mountain. The lake and adjacent rivers are full of floating pumice-stone—showing that great eruptions have taken place.

The mountain is held sacred, and the natives had not hitherto permitted any one to ascend the peak. After having spent a delightful day, and reached the limit of our journey, we turned our faces northward, and again arrived at Pohipi's encampment on the river before dark. The chief accompanied us on our way to the north-westward—for we were now directing our course towards the plains of the Waikato. The river itself cannot be followed, for in its mountain-course it is full of rapids.

We passed Sunday at a little village in a wooded valley. The weather was beautiful, and the rest and quiet delightful. Pohipi read prayers and preached to the assembled natives—one of whom, a female, spoke English. She had visited Sydney, and travelled about with an English captain, but returned in her old age to her own people. One of the natives who came with us from Tarewera found an old female relation at this place, and as they had not met for a long period their greetings were most vociferous, if

not affecting. To our habits, although a burst of tears at meeting, after long absence, frequently testifies deep feelings of joy, yet a prolonged howling and weeping seems a most strange mode of welcoming a friend ; such, however, is the way the New Zealanders show their love—spending a considerable time in weeping and lamentation before they shake hands and rub noses, a ceremony which follows the “*taangi*” or crying above mentioned.

On Monday we left the little valley ; and this time, without succeeding in engaging the services of another native to supply the place of one who left us at Taupo. No less a sum than ten shillings a day was asked, and of course refused. There was nothing for it but to carry a part of our luggage ourselves, and we shouldered our packs accordingly. Our friend Pohipi seemed very much concerned about it ; but even he was not free from the avaricious disposition of his race. The first day we passed through the valleys of a hilly country, and reached a village on a hill, called Hapotia, where we spent the night ; and the following day continued on over a land that possessed little interest. The soil seemed poor—it is destitute of people, and will not likely be resorted to by the descendants of Europeans until the rich slopes and valleys further north are crowded with inhabitants.

The weight of our burdens began to tell upon our backs and limbs ; walking was no longer a pleasure but a toil ; and rest in the tent which we pitched at sunset by the side of a stream in the desert, was an inexpressible relief. This night the rain began to fall, and the next day it blew a gale and rained in torrents ; to stay in a dripping tent would have been folly ; we therefore set out soon after dawn, and kept steadily on through wind and rain for many a weary mile. The road was this day so hilly and steep as to oblige us at times to creep up in the mud on all fours, and slide down on the other side as we best could. Sometimes we crossed mountain-streams, rushing on among steep rocks to feed the rivers of the plains ; and for several hours threaded our way through a tangled and dense forest, without meeting a living soul to vary the monotony of the desert path—with which the natives, as well as ourselves, were perfectly unacquainted. Towards evening we came upon an empty hut and a small clearing, which led us to believe that the native village to which we were journeying was not far distant. Mr. — could go no further, but as our food was nearly all exhausted and an hour of daylight left, I determined to push on, and one of the natives was willing to accompany me. At dark, however, we were still in the middle of the forest. The native advised our lying down till morning, but as I had no inclination for a forest bed in a rainy night, I insisted upon his moving onward. We frequently lost the path, but he pierced the forest manfully, and I kept fast hold of him, lest we should be parted in the black darkness of that tangled wood : he frequently sat down, and refused to go further, but I would not let him alone ; and about nine o'clock our perseverance was rewarded by finding ourselves close to the stockade of the large village of Arowhena. My bed was a hard one that night, but extreme fatigue made me sleep soundly in the smoky hut where the teacher allowed me to rest.

Early on the following day I sent some supplies to the party in the forest, but as I was most anxious to reach the plains which now were seen stretching away to the northward, in order to make arrangements for descending the river, I pushed on alone. The native who had come so far was too tired to proceed, and the others, as before, made enormous charges, which I continued to resist. Arowhena stands on the highest point of the

range of hills which bound the plains of the Waikato and other rivers. Between that village and Taupo, as I have already mentioned, the appearance of the country is very unfavourable, but from thence to the northward it assumes a most fertile and even beautiful appearance. My path led down the slopes of the hills to the flat and undulating country below, watered by many streams, encircled by many woods, and enlivened by the smoke of many villages. I was so weary with my burden, and foot-sore with long walking, that when I stopped to rest I could scarcely rise again; yet I enjoyed greatly the cheering prospect before me. Being short of provisions, I gladly accepted some roasted potatoes from an old woman who kindly asked me into her wretched hovel on the way-side. In the evening I reached a large village where I was told that an European resided. The native men, who crowded round me, to ask questions, offered to show me his dwelling, but took no notice of my tired condition; a woman, however, true to the nature of her sex all over the world, saw at a glance that I was weary, and upbraided them for not taking my burden, of which I was immediately relieved. The European, Mr. Perry, received me with much hospitality, and gave me all the comfort which his cottage could afford. After a sound sleep I felt much restored, but my feet were so swollen as to prevent my walking any further. Mr. Perry therefore kindly lent me his horse, by which means I soon reached the Church Mission station of the district, and met with a cordial welcome from the Rev. John Morgan. That station—Otawhao—is in the midst of a very populous part of New Zealand, for the level country is extensive; and several rivers which take their rise in the hills, pass near it on their course to the sea. The Thames flows to the northward, and enters the Gulf of Hauraki about 30 miles to the eastward of Auckland. The Waipa joins the Waikato, which, as I before mentioned, falls into the sea, on the western coast. The land on the banks of these rivers is generally level and fertile, and of sufficient extent to afford support to a very great population. As they can be easily reached from Auckland, there might be a gradual spreading of colonization by means of these navigable rivers. At present many native villages and cultivations are to be seen; but far the greater portion of this fine country lies waste. I doubt not but the time will come when towns, villages, and farms will give life to the present dull scenery; and instead of the log canoe, by which all passengers are now conveyed on the rivers, smart steam-boats may connect the settlements with each other, and carry communications from Auckland to the heart of the country in a few days. Judging from what has been done in other lands, such ideas are not unreasonable. But though almost certain to arrive, these changes in a land so distant from the mother-country, cannot take place very rapidly: and I could not avoid a feeling of melancholy in the thought, that none of the present generation are likely to see the realization of the picture which the imagination is apt to form at every remarkable point of view.

By far the most interesting of the native settlements in the Waikato country is that of Rangiawhia, near Otawhao, the Church Mission station. I rode over there, and to my great surprise saw from an eminence several hundred acres under cultivation. The wheat which they have lately begun to plant was then just above ground, and gave such a green appearance to the land that it seemed like a fine English estate laid down in grass. Clumps of tall trees, remains of the forest, have been left in many places, and the native cottages and chapels on the rising grounds with fruit-trees about them have quite a picturesque appearance. They are leaving off

the spade and hoe, and using a plough and horses, of which they have seen the advantage—the Government having sent a team and a European to teach them its use. They have a good flour mill, which I found at work grinding the last year's wheat for the Auckland market, and they are very busy taking in more waste land for further cultivation. I was scarcely prepared to see so pleasing a scene of industry and improvement, chiefly owing to the benevolent and unwearied exertions of the Missionary, Mr. Morgan. The natives see very clearly the benefits they derive from industry, and their example is being followed by other tribes on the rivers, who are saving the money that their pigs and potatoes sell for at Auckland, to purchase flour mills, several of which are now in progress of erection. Mr. Morgan is at this time striving to excite them to improve their houses and style of living, as well as their fields, and also endeavouring to establish a school for half-caste children, many of whom are living with their native mothers, or as neglected orphans in the villages.

From Otawhao we passed over a few miles of level country to the river Waipa, which we crossed, and endeavoured to reach a Wesleyan Mission station by walking along the left bank : but our guides mistook the way. At sunset it began to rain heavily, and after crossing several swamps and ravines, we finally reached the station—wet, cold, and weary—just as the family were about to retire to rest. Unseasonable as was the hour, on a Saturday night, we were most hospitably received ; and during our stay there, the utmost kindness and attention was shown us by the Rev. Mr. Buttle and his family. The native congregation at the chapel on Sunday was not very numerous, as the upper part of the Waipa, near the hills, is not so populous as the country near the Waikato.

The efforts of the Missionaries of all denominations are not only directed to the conversion of the natives to Christianity, but also to the general training of the young—for which purpose several excellent schools have been established, which are aided by grants from the Colonial Treasury. As the New Zealanders possess habits of industry, aptitude to acquire a knowledge of European arts, and fondness for agriculture, different from most of the aboriginal inhabitants of other lands who have disappeared before the colonising progress of our race, it may be hoped that the noble efforts which are being made in their behalf may prove successful in completely civilizing them, and turning the force of character and intellect which they possess to perfecting a knowledge of such occupations as may render them serviceable to the colonists who will value and cherish them in proportion to their usefulness. The progress they have made of late years is already felt, for they help to a considerable extent to supply the markets with flour, potatoes, and other vegetables, and aid the settlers in all the business of the farm. They are also employed as masons and labourers on public works and roads, near Auckland and Wellington.

The banks of the Waipa are extremely fertile, though not very picturesque. The scenery at the meeting of its waters with those of the Waikato is very beautiful ; and a vast extent of good land can be seen from any eminence. We called at the Church Mission Station, Kaitotahi, on our way down the river, and were most kindly received by Mrs. Ashwell—her husband being absent with a tribe who had gone on a warlike expedition across the country. On such (now rare) occasions the Missionaries generally accompany their people, in the hope of making peace ; and as Mr. Ashwell returned before we left, we learned that he had been successful on this occasion. The opposing tribe, with whom a dispute about land had arisen, were also

accompanied to the place of meeting by their Missionary, a Wesleyan, and by the joint efforts of these two gentlemen and an officer in the service of Government, who had opportunely arrived, two bodies of armed New Zealanders were induced to lay aside their weapons, and refer the settlement of the dispute to the Governor-in-Chief, in whom they have perfect confidence. I have mentioned this incident to show you how tenacious the New Zealanders are of any interference with their possession of their so-called waste lands ; and yet how amenable to the counsels of those whom they know to be their friends. The tribes of the Waikato, numbering several thousand men, took no part in the wars which agitated the northern and southern parts of the colony, and their leaders would be more likely to follow Walker's example than to take part with any turbulent chiefs of their own race : yet those who have studied their character are of opinion that if any other act of injustice were to be put in force against them they would rise as one man in defence of what they conceive to be their rights. It has been seen that when their fierce passions are aroused by warfare, they rapidly return to savage practices—and who can tell what might be the end of a contention, in which the whole people would be engaged ? It is much to be feared that the goodly, but still fragile, fabric which the Missionaries have reared, by much patient labour and devotedness, would crumble to the dust, and the light which now beams upon this land and its people—filling us with hope for the future—would be extinguished in heathen darkness and in blood.

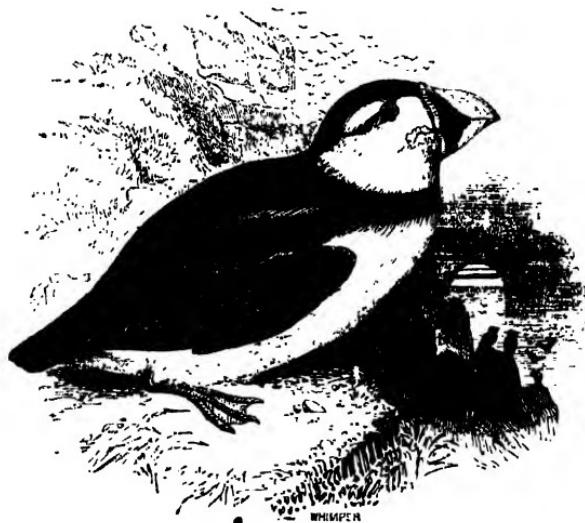
We ascended a high wooded hill, which forms a very picturesque object on the one side of the river opposite Mr. Ashwell's neat cottage. From its summit we obtained a fine view of the winding river and the adjacent country, up and down its course. The scene was something like that of the Rhine, viewed from the Drachenfels, but wanting the towns, fields, and vineyards, which adorn that beautiful stream. We could also see many small lakes, not far back from the river's banks on either side ; but the absence of cultivation and of woods gives this part of the country a dull and unpromising appearance. Lower down the stream the banks are thickly wooded, and as palms and other graceful trees hang over the water, the scenery has a rich and even oriental aspect. We passed a night in a hut on the river side—and the moonlight on the water, trees, and islands, added a charm to the natural beauty of the scene : though I must confess that certain reminiscences of comfortable hotels and good cheer on the banks of the Rhine, or the luxuries of accommodation-boats on the Ganges, came over my mind in striking contrast with the rude and primitive style of living and travelling on the Waikato. The nearest point of the river to Auckland leaves a distance of about 40 miles to be travelled over land ; part of the way is through a forest, and the path being often trodden by natives, and with their pigs, on their way to the capital, is after rain the worst that can be imagined—a continuous slough of deep mud, mixed with slippery roots of trees. We however made the best of it ; and, by evening of the day we left the canoe, we had emerged from the forest and encamped on the slope of the hills, with a fine prospect of extensive open plains and the broad estuary of the Manukau between us and Auckland, the peak of Rangitoto Island, which marks the entrance of the harbour, being distinctly visible in the distance.

At dawn we were astir, being desirous of reaching town that day. The weather was beautiful, and the country over which we travelled gave promise of abundant scope for settlers within a moderate distance of the

seat of Government. Indeed, it is much to be regretted that so very few Europeans are located in that district. The available country is approachable also by creeks of the Manukau ; and lower down, an extensive arm of that estuary runs inland within a few miles of the Waikato, leaving only a mile and a half of portage to a creek of that river ; by this means goods and passengers are conveyed with ease from Auckland to the interior. On one occasion, when I visited the Mission station under the care of the Rev. R. Maunsell—where there is an excellent school for native boys—near the entrance of the Waikato, I reached the town on my return in less than 24 hours. On that occasion I was aided with a horse over the land part of the journey, and have the pleasure to remember that the use of the animal, together with a guide, were freely offered to me by the native chief and teacher, named Paul, living in a village near the head of the Waiuku, and for which he would not take any return ; as he did not know me, such a disinterested act of kindness said much for his liberality. There is indeed a feeling of the greatest delight left on our minds at the remembrance of the kindness and hospitality we constantly met with on our journey from the Missionaries, and from the few European settlers that we had opportunities of visiting, as well as from the native chiefs and people, for whose welfare every one who has seen them in their own country must feel a deep interest.

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#### THE PUFFIN.



THIS is a remarkable genus, in which the beak rivals, in its development, the monstrous proportions which are seen in the Toucans and Hornbills. This organ, shorter than the head, is higher than its length, somewhat triangular in outline, very much compressed, with both mandibles arched to the point : the culmen or ridge as high as the top of the head, with a cutting edge, the sides cut into transverse furrows ; the corners of the mouth bordered with a dilatable skin ; the nostril is a narrow slit placed

close to the inner angle of the mandible. The wings are short, narrow, and pointed ; the legs, placed far back, are short ; the toes webbed, armed with curved claws, the hind toe wanting.

The Puffins are inhabitants of the northern regions, but are migratory visitors to the more temperate regions, keeping near the shore, concealing themselves by night in the clefts of rocks or in burrows, which they themselves excavate to the depth of a yard or more. In these burrows the female lays a single egg on the bare ground. Their flight is heavy and rather quick, but only sustained for short distances, commonly just above the surface of the water, which they sometimes strike with their feet to acquire an additional impetus. In the water their speed is great, and they dive with great facility. They principally feed on marine *mollusca* and *crustacea*, to which small fishes are added.

The Common Puffin or Coulterneb visits the rocky shores of the British Islands in summer, for the purpose of breeding ; remaining from April to August. It is a bird of singularly grotesque appearance : its short thickset form, its erect attitude, and above all, its extraordinary beak, grooved over with furrows, and marked with bright colours, give it a very peculiar aspect. It is not much larger than a pigeon, but of stouter form, and with a greater head : the crown, hind head, whole upper parts, and a collar round the neck are black ; the sides of the head and face pale grey, the whole under parts pure white : the central portion of the beak is pale blue, the base with the mouth yellow, the grooves and tip orange ; the latter is the hue also of the eyelids, and of the legs and feet.

The shallow surface-earth on the summit of the coast-cliffs affords an opportunity to the Puffin to excavate its burrow ; but not unfrequently it saves itself some labour by taking possession of the burrow of the rabbit ; the formidable beak of the bird presenting an unanswerable argument to the discomfited quadruped, when he would presume to dispute the tenancy. Mr. Yarrell enumerates as lodging-stations around this country, the Isle of Man, the coast of Anglesey, the Scilly Islands, where it is more common than in Cornwall ; the high cliffs of the Isle of Wight, between the Needle-rocks and Freshwater-gate ; the Yorkshire coast ; the Fern Islands ; Puffin Island in the Frith of Forth, and others of the numerous Scottish islands.

"Many Puffins," observes Mr. Selby, "resort to the Fern Islands, selecting such as are covered with a stratum of vegetable mould ; and here they dig their own burrows, from there not being any rabbits to dispossess upon the particular islets they frequent. They commence this operation about the first week in May, and the hole is generally excavated to the depth of three feet, often in a curving direction, and occasionally with two entrances. When engaged in digging, which is principally performed by the males, they are sometimes so intent upon their work as to admit of being taken by the hand, and the same may also be done during incubation. At this period I have frequently obtained specimens, by thrusting my arm into the burrow, though at the risk of receiving a severe bite from the powerful and sharp-edged bill of the old bird. At the farther end of this hole the single egg is deposited, which in size nearly equals that of a pullet. Its colour when first laid is white, sometimes spotted with pale ash-colour, but it soon becomes soiled and dirty from its immediate contact with the earth, no materials being collected for a nest at the end of the burrow. The young are hatched after a month's incubation, and are then covered with a long blackish down above, which gradually gives place to the

feathered plumage, so that, at the end of a month or five weeks, they are able to quit the burrow, and follow their parents to the open sea."\*

At the lone island of St. Kilda, many of these birds are said to be taken as they sit on the ledges of the rocks, by means of a noose of horse-hair attached to a slender rod of bamboo-cane. This mode is most successful in wet weather, as the Puffins then sit best upon the rocks, allowing a person to approach within a few yards, and as many as three hundred may be taken in the course of one day by an expert bird-catcher. They are sought principally for their feathers,† which, like those of all these and similar birds, are copious, soft, and downy; and, therefore well adapted for beds.

#### WILD FLOWERS.



CRAB APPLE. (*Pyrus Malus.*)

FEW, indeed, are the wild fruit-trees of our land, and fewer still are those which can claim to be true natives of our soil, for some of those now growing wild were introduced by the Romans. The Crab Apple, however, is a truly British plant, and its richly tinted blossoms grace our spring woodlands, and the fruit is ornamental at a later season of the year. Our wild

\* Brit. Birds, iii. 470.

† Macgillivray.

apple is of little use, save that its juice forms the verjuice of commerce ; yet the harsh austere crab of the wild tree is the origin of all the valuable apples, the blossoms of which render the orchard grounds of some counties so beautiful.

Besides the many uses which we, in modern days, make of the Apple, it was employed for many others by our ancestors. Thus, a cosmetic was formerly made from the juice, and in some diseases physicians prescribed, as a remedy, that the patient should hold, both sleeping and waking, a sweet apple in his hand, as its odour was considered healthful. The old herbalist, Gerard, also tells us of a valuable ointment made in his time of the pulp of apples, lard, and rosewater, which was called pomatum, from *pomum*, an apple, and was used to beautify the skin. Before the introduction of the hop into this country, cider was in much more general use than it is now, and old writers complain that the use of that plant had “ transmuted our wholesome beverage into beer.” Cider appears to have been a drink of very old use in this country, and is probably the Sieder of the ancient Britons. There is no doubt that the apple was cultivated in this land by the Anglo-Saxons; and it is now planted throughout Europe as far as the sixtieth degree of latitude, and in the temperate parts of Asia and North and South America. It has been observed that the Apple will flourish in the open air in every land in which oaks thrive. The fruit mentioned in Scripture as the Apple is probably the citron.

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#### THE GLACIERS.

GLACIERS are among the most sublime and wonderful features of Alpine countries. They are vast collections of ice, which fill up the higher valleys and occupy the slopes of lofty mountains. Nothing can exceed the grandeur of these enormous fields of ice, of which it is, indeed, impossible to give any description which shall truly represent their nature and appearance to one who has never visited them. Perhaps the best notion of a glacier might be gained by supposing some mighty river, a mile broad, and several hundred feet deep, pouring with vast waves down the rocky side of a mountain, but suddenly checked in its course, and converted into ice, the gigantic waves split asunder, and projecting in sharp angles from the surface, while the whole should sparkle with dazzling brilliancy.

Every one is aware that the atmosphere becomes colder as we ascend above the level of the sea, until at a certain height, varying according to the climate, snow exists all the year round. At the equator a height of sixteen thousand feet is required to preserve snow unmelted at all seasons ; in the Alps of Switzerland, a height of eight thousand seven hundred feet is required ; but in high northern latitudes, snow is found to exist all the year round at the level of the ocean.

Of the vast quantity of snow which falls every winter upon the earth, that which is deposited on high mountains, and is beyond the melting power of the solar rays, accumulates to such an extent, that it slides off the mountain slope by its own weight, or by the action of wind and tempests, and forms “ the avalanche—the thunderbolt of snow.” The snow of these upper regions is also brought down by the warmth of spring acting just below the snow line. The water formed by the melting of the snow filters through to a great depth, where it is frozen. This process goes on year after year ; the snow which falls above the snow line is not

GLACIER OF ZERMATT. (*Middle Portion.*)

melted until it is shot down to a lower level, where, in melting and again freezing, it forms the ice of the glacier. Now comes the most wonderful part of the history. These vast fields of ice, the result of thousands of avalanches, do not remain fixed in the spot where they are first formed. Occupying, as they mostly do, the upper valleys and slopes of lofty mountains, they make a gradual never-ceasing progress, not visible to the eye, yet always going on. The mighty glacier descends with slow but irresistible motion in the lower valleys—a river of ice always wasting, and always being renewed ; no human power can impede or direct its progress ; onward it comes, numbering perhaps not more than five hundred feet in a year—until it overturns the huts of the peasantry, and exterminates, beneath its ponderous icy foot, orchards and fields of smiling corn.

But has the summer's sun no effect upon this gelid stream ? Many glaciers at their termination in the lower valleys are a thousand feet high, and a mile across ; so that it may well be supposed the longest summer, and the brightest sun in Switzerland, would make but a faint impression upon ice stored in a magazine of such dimensions, and extending often to a length of twenty miles. But the ice is being constantly wasted from a variety of causes. On approaching the foot of the glacier an icy cavern is seen, from which issues a rapid and intensely cold stream of turbid water ; this is derived chiefly from the melted snow and ice, which penetrates through the cracks and fissures of the glacier into a channel below, and wears for itself a cavern, whence it rolls into the light of day. Some of these glacier streams are of great force and intensity, varying, of course, with the season of the year and the hour of the day : they have their greatest flood in July, when the sun has most power ; and they swell

visibly, and roar more loudly, as the hottest part of the day advances; they diminish towards evening, and are smallest in the night.

At the termination of the glacier there is a daily waste of ice, but this waste is daily renewed; for the mass is pressed onward with resistless force, scattered around blocks of stone, varying from the size of a house to that of a pebble, to a distance of many yards and often miles, obliterating the traces of man's industry, and converting his orchards and corn fields into a stony waste.

These stones are distributed over the surface of the glacier in a somewhat regular order, and form what is called the *moraine*. They are torn from the rocks on both sides by the expansive force of ice. The rain and melting snow which fills the crevices with water is frozen during winter, and in freezing, the icy wedges expand and rend off masses of stone often measuring fifty feet along one of their sides. The first thaw melts the ice which binds the blocks to the parent rock, and they come rolling down upon the glacier throughout the whole of the summer. This constitutes one of the chief dangers of glacier travelling. As the glacier creeps on, some of these stones also move with it until they are brought to the extremity of the glacier, when they are shot over its edge, and form what is called the *terminal moraine*. Other stones are thrown up on the banks or shores of the glacier. If these be very steep, the blocks fall into holes and openings left between the ice and the rock, where they are ground and chafed, and serve to polish the rock itself, producing grooves and scratches in the direction of the moving ice.\* When the shore has a more gradual slope, the blocks are frequently stranded, and the heat of the ground usually causes the ice to sink at the sides, forming a sort of trough or hollow, in which the blocks accumulate in a ridge. In ascending the glacier it is often necessary to proceed along this ridge for a considerable distance; the climbing up and down among these stony masses is difficult and even dangerous, for some of them are so delicately poised that a step is often sufficient to set them in motion and produce a fall. It is quite impossible to form a pathway over this *lateral moraine*, as it is called, because the glacier changes its dimensions in different seasons and in different years. When the glacier, like a swollen torrent, occupies its bed to an unusual depth, the moraine is uplifted with it; and when the warmth of summer reduces the bulk of the ice, the blocks are often left on rocky shelves at a considerable height above.

When two glaciers from separate sources unite in a common valley, exactly as two rivers would do, the edging moraines common to each unite upon the surface, and mark, by a band of stones, often for miles, the actual separation of the two ice streams. This new moraine of course occupies the centre of the compound stream, and is therefore called the *medial moraine*. The accompanying diagram will illustrate the formation of the medial moraines, the arrows pointing in the direction in which the glacier streams move.

The middle part of the glacier is generally much smoother than the



\* In places where glaciers have long ceased to exist, these marks are often visible, by which means the icy stream can be traced to places where its presence might not otherwise have been suspected.

lower part, so that travellers can walk upon the bare ice with comparative ease. But the progress is slow on account of the numerous cracks in the ice which extend across the glacier like so many yawning gulfs. These cracks, or *crevasses* as they are called, are often about eight or ten feet wide, and extend some sixty feet across the glacier. They may be passed by walking along the edge to their termination, and then passing round to the opposite side; but they are often so numerous as to bewilder and confuse the stranger. Sometimes with the assistance of a long pole spiked with iron, called a *baton* or *alpenstock*, without which it would be quite impossible to travel among glaciers, the traveller may leap across a crevasse; but this requires caution on account of the wide gaping mouths on the other side. Sometimes to prevent a tiresome walk along the edge of a crevasse, the guides form a kind of bridge with their batons, over which to help the traveller. The depth of these crevasses varies according to the thickness of the ice, and their position in the glacier; on looking into them, the ice appears of a beautiful blue colour; but the eye cannot penetrate far. The crevasses are of course most dangerous when covered with a thin coating of snow: many travellers and hunters have thus been hurled into the abyss, and have miserably perished.

In ascending the glacier on a bright sunny day, the effect of the heat upon the ice is apparent. A number of pools of water are formed in the ice; and innumerable rills of exquisite purity are also set in motion along the hollows or furrows of the ice, and uniting in larger streams, pour down in bold cascades into the crevasses. In some places a loud throbbing sound like the clack of a mill may be heard, which the guides called *le moulin*, or the water-mill. This is caused by an abundant cascade, formed by the union of thousands of little rills, pouring its waters into a cylindrical hole. In a moulin witnessed by the writer on the glacier of the Mer de Glace, the stream was divided into two, each branch descending through a separate hole into the icy bowels of the glacier. As the holes were of considerable size, the disturbance of the air probably caused the clacking sound. A beautiful blue light, gradually fading into blackness, permitted a portion of the interior to be seen. It is remarkable that whatever be the state or progress of the glacier, these moulins are found in almost exactly the same position; that is, opposite to the same fixed objects on the side of the glacier.

It has been said that the glacier, like a river, is constantly moving towards a lower level. In the year 1842, Professor Forbes, of Edinburgh, performed some beautiful experiments on the glacier of the Mer de Glace, in order to determine its rate of motion. He made his observations opposite a solid wall of rock in contact with the ice, upon which might be marked the progress of the glacier as it slid by. A hole in the ice was made to the depth of two feet, over which a theodolite was nicely centred by means of a plumb line, and levelled. A level run directly to the smooth face of the rock, gave the means for determining the sinking or rising of the glacier; for if this varied, the telescope would be no longer level, and the amount of variation being known, the alteration in the surface of the glacier could be easily determined. Other fixed marks were made for noting the downward or forward motion of the icy stream, which was afterwards measured from day to day on the smooth face of rock already noticed. "The marks on the rock," says Mr. Forbes, "indicated a regular descent, in which time was marked out as by a shadow on a dial; and the unequivocal evidence which I had now for the first time obtained, that even whilst walking on a glacier, we are day by day, and hour by hour, imperceptibly carried on by

the resistless flow of this icy stream, with a solemn slowness which eludes our unaided senses, filled me with an admiration amounting almost to awe, whilst I foresaw with lively interest the definite and satisfactory knowledge of laws which would result from these methods of observation."

By continuing the observations, it was found that, from the end of June to the end of September, the motion of the ice amounted to one hundred and thirty-two feet, or rather more than seventeen inches a day. A very intelligent guide, employed by Mr. Forbes, watched the motion of the ice during the winter. From the 10th October to the 12th December 1842, the ice had moved seventy feet, thus giving a daily velocity of nearly sixteen inches, but little less than the average summer motion. From December 12th to February 17th, between which the coldest weather occurred, the daily motion was only thirteen and a half inches; and from this time up to the 4th April 1843, the average daily motion again increased to rather more than seventeen inches; thus clearly proving that the glacier moves in winter as well as in summer.

The change of level, or depression of the surface of the glacier, during the summer months, was far greater than had ever been expected. In June, the surface sank at the rate of more than four inches a day; but this quantity diminished gradually, until, in September, it was only two and a half inches daily. This waste arises from the action of the sun and rain setting free the innumerable rills and cascades already noticed, and washing and thawing the surface; but there are also other causes to explain the great daily waste of this huge magazine of ice. The streams which pour down the various crevasses, form a tolerably broad and rapid current below the glacier, whose motion wears away the ice, and forms spacious cavities; the ice in contact with the ground is also constantly melting, from the natural heat of the earth; the lower portion of the glacier also moves quicker than the upper part;—all these causes assist to change the level, or depress the surface of the glacier. During wet mild weather, the glacier has been known to sink as much as a foot a day.

On continuing to ascend the glacier the traveller steps from the ice upon loose snow, in which he may sink knee-deep at every step, while, perhaps, the sun is shining fiercely upon him. He is now near that part of the glacier, where are housed the stores of each winter for supplying the waste of the lower icy region. Here the snow, instead of melting, assumes a granular form, like rice or peas, and is called *firn* by the Swiss, and *haut névé* by the French. As this névé slides lower down, and passes into complete ice, it assumes the transparency and colour of the proper glacier: but before this it has a greenish tinge; the warmth of the summer-day commencing a thaw, which the cold of night soon terminates. The névé has its crevasses, but they are wider, and more irregular than those of the glacier, and the light transmitted by their walls is green instead of blue. "The substance is far more easily fractured than ice, and also more readily thawed and water-worn; hence the caverns in the névé are extensive and fantastical, often extending to a great distance, under a deceptive covering of even snow, which may lure the unwary traveller to destruction. Sometimes, through a narrow slit or hole, opening to the surface of the névé, he may see spacious caverns of wide dimensions, over which he has been ignorantly treading, filled with hills of detached ice-blocks, tossed in chaotic heaps, while watery stalactites—icicles ten or twenty feet in length—hang from the roof, and give to these singular vaults all the grotesque varieties of outline which are so much admired in calcareous caverns, but which here show to a far greater advantage, in

consequence of their exquisite transparency and lustre, and from being illuminated, instead of by a few candles, by the magical light of a tender green, which issues from the very walls of the crystal chambers."

In descending the glacier, after the sun has sunk behind some of the tallest peaks, the vapour, which before had been made elastic and invisible by his rays, now begins to condense, and to creep along the tops of the rocky walls, as slowly and gradually as if a hand were letting down a curtain of gauze over the scene; but the tallest peaks continue for a much longer time to glow with a golden lustre, until at length a mournful, bluish livid light prevails, and gives a totally new aspect to the scene. The glacier also undergoes a change; the wet slushy surface becomes hard and glassy, exposing the pedestrian to frequent falls; rills of water, which a very few hours before were sparkling in the sun, and hurrying to a lower level, have now disappeared altogether, or have shrunk in size; pools are edged with icy crystals; and everywhere the crackling sound of the feet attests that Frost is busy in asserting his dominion, and repairing the waste of a summer's day.

When the light is subdued, and the observer looks down upon the glacier from a height, a number of brownish bands are discovered in curves, bending downwards from the moraines, and appearing like a succession of waves, some hundred feet apart. In these bands, Mr. Forbes saw a likeness to the lines into which froth or scum on the surface of a thick fluid would form themselves, if that fluid were allowed to flow down an inclined trough or basin. The curved form of these bands was evidently owing to the greater rapidity of the glacier at the centre than at the sides.

The value of glaciers in the economy of nature will be understood from the foregoing description, and it will be seen that by a wise and bountiful arrangement of our Creator, the summer heat, which dries up other sources of water, exerts its mild influence upon the hidden stores of the glacier, and pours them out with a measured hand, to diffuse gladness and fertility over the lower region of the plains.



THE ORTLER SPITZ. FROM THE SUMMIT OF STELVIO PASS.

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NINEVEH.—WORSHIP—*continued.*



HUMAN-HEADED LION.

WHAT was the purport of the individual symbols or utensils, used in the religious services, so frequently depicted on the monuments, it would be difficult if not impossible now to ascertain. The cone of the cypress and the honeysuckle tree were connected with the worship of Mylitta, the oriental Venus to whom the pomegranate among fruits was sacred; no blood was offered to her, but living animals of the male sex, especially kids. The presentation of a branch of flowers and fruits, so frequent in these acts of adoration, may be alluded to in a passage of Sacred Writ which has given rise to some conjecture among critics.

“Then he said unto me, Hast thou seen this, O son of man? Is it a light thing to the house of Judah that they commit the abominations which

they commit here? for they have filled the land with violence, and have returned to provoke me to anger: and, lo, *they put the branch to their nose.*" (Ezek. viii. 17.)

The basket commonly carried in the left hand of the ministering priest may possibly have contained incense, or else the cakes of dough which formed a prominent part of the offerings of the worship of Venus.

"The children gather wood, and the fathers kindle the fire, and the women knead their dough, to make cakes to the queen of heaven, and to pour out drink-offerings unto other gods, that they may provoke me to anger." (Jer. vii. 18.)

"And when we burned incense to the queen of heaven, and poured out drink-offerings unto her, did we make her cakes to worship her, and pour out drink-offerings unto her, without our men?" (Jer. xlvi. 19.)

The classic writers inform us that the offering of cakes made of flour, salt, honey, and oil, was a custom of great antiquity, and preceded (but in this they were mistaken) the use of animal sacrifices. Horace says,—

"A graceful cake, when on the hallowed shrine  
Offer'd by hands that know no guilty stain,  
Shall reconcile th' offended powers divine,  
When bleeds the pompous hecatomb in vain."

*Ode xxiii.*

We might also mention the twelve cakes or loaves of shew-bread, which constantly stood upon the golden altar in the tabernacle and temple of Jehovah.

But what is more to the purpose is, that Homer repeatedly informs us that the cakes offered in sacrifice were presented in baskets. Thus in Nestor's sacrifice to Pallas, on the occasion of the visit of Telemachus,—

"\_\_\_\_—Aretus brought  
A laver in one hand, with flowers emboss'd,  
And in his other hand a basket stored  
With cakes."

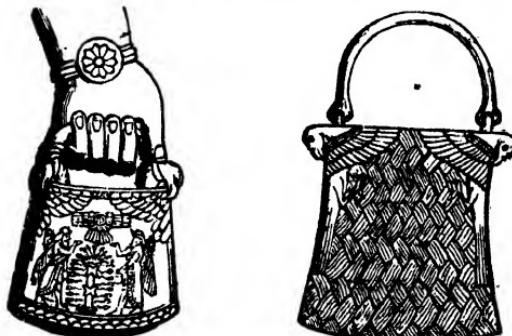
*COWPER'S Odyss. iii. 550.*

And Penelope, in the absence of her son on the same errand,—

"\_\_\_\_—A basket stored  
With hallowed cakes to Pallas off'ring; pray'd."

*Ibid. iv. 919.*

The Institutes of Menu declare (vi. 54) a *basket made of reeds* to be a fit vessel for receiving the food of Brahmins devoted to God.



BASKETS

Whatever the application of the sacred basket may have been, it was one of the most indispensable utensils of the Assyrian worship. It appears to have been square, and about as deep as wide, that is, about five inches; with a handle, apparently of wire, passing in a bow from one side to the opposite. In the earliest forms, as on the Nimroud sculptures, it was generally either plain, with a narrow elegant border, or else ornamented with an embossed representation of the worship to which it was consecrated, the sides displaying figures of priests over the sacred tree. At a latter epoch, as at Khorsabad, it took the appearance of plaited or interwoven work, like matting in texture. But probably it was always formed of metal, and this pattern may have been given in allusion to the original rude basket of wicker, which may have been used in primitive times. Here we occasionally see it of a different form, being narrow, and deep, and rounded at the bottom.

Before we close this very imperfect notice of the Assyrian idolatry, as gathered from the monuments, we must speak of the strange compound animal forms that occupy so prominent a place on them. They who have looked upon the gigantic human-headed winged lion and bull, that now adorn the great lobby of the British Museum, may conjecture the imposing effect produced by such colossal guardians when stationed at either side of the portals that opened into every hall of the temple-palaces of Assyria. Carved in bold, almost full relief, their muscular well-knit limbs, their gigantic dimensions towering to twice the stature of man, their expanding eagle-pinions, and the awful majesty of their human countenances as they frowned down from their imposing elevation upon the spectators, must have impressed upon the latter a deep feeling of the greatness and sacredness of the beings they were intended to adumbrate.

But what ideas were intended to be conveyed by these strange mythic forms? Were they idols in the strict sense, objects of direct adoration? Some have thought they were. Others have considered them rather as embodiments to sense of abstract qualities, intellect, strength, ubiquity. The emblem which shadowed forth in vision to the Jewish prophet the Babylonian kingdom, might suggest,—especially remembering that in other cases, as those of the Persian ram and the Macclonian goat, nationally recognised emblems were so chosen,—that under these monstrous combinations of heterogeneous forms was couched a symbolic representation of the Assyrian empire, of which the Babylonian was but a sort of reproduction.

“And four great beasts come up from the sea, diverse one from another. The first was like a lion, and had eagle’s wings: I beheld till the wings thereto were plucked, and it was lifted up from the earth, and made stand upon the feet as a man, and a man’s heart was given to it.” (Dan. vii. 3, 4.)

It seems manifest that they were not gods. Their proper position at the entrance-gates of the edifices, and not in the sanctuaries, their absence from the scenes which represent worship, and the relations which they sometimes sustain to the priests, show this. In the ornamental embroidery of a royal robe there is represented\* a vulture-headed priest who runs up to meet a human-headed, winged lion, adorned with the sacred three-horned cap, and seizes him by the fore-paw, while with the other hand he prepares to strike the gigantic monster with a flexible weapon, somewhat like an India-rubber life-preserver. The fear depicted in the countenance of the

\* Layard’s Mon. of Nin. pl. 45.

bearded monster, as he draws himself strongly but vainly back from the grasp of his assailant, contrasts strikingly with the rage and eagerness conveyed by the aspect and action of the latter.

A similar scene is depicted in another part of the robe,\* with a slight variation; the lion-man is looking over his shoulder, as if imploring help from behind.

In a hunting scene, likewise embroidered,† the king in his chariot shoots a wild bull; before him a vulture-priest has pursued and caught by the tail a human-headed, winged lion, and is smiting him with a mace. The strange prey looks back and strives to escape, while another in the distance gallops off, glancing back at his fellow's danger.

These representations are conclusive that divinities were not intended by the compound animals; and we can hardly suppose that the artist would have depicted them on the royal robes as subject to such indignities, if they had been considered as emblems of the nation itself.

The similarity of these forms to the cherubim, seen in vision by Ezekiel, has been often noticed; and it is the more worthy of remark, because that vision was seen by that prophet "in the land of the Chaldeans, by the river Chebar," at no great distance from the mighty city, which, with its sculptured bas-reliefs and magnificent imagery, was in all probability familiar to his gaze.

"This is the living creature that I saw under the God of Israel by the river of Chebar; and I knew that they were the cherubims. Every one had four faces apiece, and every one four wings; and the likeness of the hands of a man was under their wings. And the likeness of their faces was the same faces which I saw by the river of Chebar, their appearances and themselves: they went every one straight forward." (Ezek. x. 20—22.)

It is not said *how* he "knew that they were the cherubim;" but, as a priest, Ezekiel must have been familiar with those which were graven on the walls (2 Chron. iii. 7) of Solomon's temple, which were carved with palm-trees and open flowers upon the doors, and which were interchanged with oxen and lions on the bases of the brazen lavers (1 Kings vi. 32—35; vii. 29, 36); and he must have often heard of those gigantic forms which expanded their wings above the ark within the Holy of Holies.

"And within the oracle he made two cherubims of olive tree, each ten cubits high. And five cubits was the one wing of the cherub, and five cubits the other wing of the cherub; from the uttermost part of the one wing unto the uttermost part of the other were ten cubits. And the other cherub was ten cubits: both the cherubims were of one measure and one size. The height of the one cherub was ten cubits, and so was it of the other cherub. And he set the cherubims within the inner house; and they stretched forth the wings of the cherubims, so that the wing of the one touched the one wall, and the wing of the other cherub touched the other wall; and their wings touched one another in the midst of the house. And he overlaid the cherubims with gold." (1 Kings vi. 23—28.)

But much earlier than Solomon's time the forms of the cherubim were known to Israel; for they were placed upon the mercy-seat within the tabernacle soon after the departure from Egypt. And it is remarkable that while the most minute directions were given for the construction of the tabernacle, the altars, the utensils and vessels of the sanctuary, and the

\* Layard's Mon. of Nin. pl. 48

† Ibid. pl. 49.

vestments of the priests, no such particularity is observed in the command to make the cherubim. The simple behest,—“Thou shalt make two cherubim of gold,” seems indubitably to imply a knowledge of the form already existing. And whence came that knowledge, if it was not handed down by tradition from those who before the flood had seen the awful forms that stood at the eastern entrance of the garden of Eden, guarding the access to the Tree of Life?

These compound animal forms were common to the nations of antiquity. In Egypt under the form of sphinxes, they were placed at the entrances of their temples, sometimes in long rows or avenues, as in that grand one leading from the Temple of Luxor to that of Karnak. At Persepolis, at Babylon, and at Nineveh, they stood at the portals of the magnificent palaces. At Ellora, in India, they are seen in an ancient temple, of surpassing grandeur; and the Greeks and Romans borrowed and preserved similar mysterious forms.

The very extensive prevalence of this idea around the cradle of the human race, and the very remote antiquity to which it may be traced,—for in Egypt it must have been embodied almost immediately after the deluge,—seem to point to an antediluvian origin.

If then we suppose these various combinations of diverse animal forms to have been conventional embodiments of the angelic cherubim, we may possibly find in this suggestion an explanation which will meet all the circumstances in which they are represented. The leading idea appears to be that of *guardianship over sacred places*. This was expressly the office of the cherubim at the gate of Eden; they precluded intrusion into the garden; “they kept the way of the tree of life.” Their position over the ark of the covenant, both in the tabernacle and in the temple, overshadowing it with their wings; their portraiture all over the walls within the oracle; on the veil that screened the most holy place in both the tabernacle and the temple; on the door of the oracle; on the door of the temple; and on the curtains of the tabernacle forbade intrusion. In the temple they were sculptured on the ten lavers (1 Kings xii. 29, 36), in which the sacrifices of burnt offering were washed (2 Chron. iv. 6), but *not on the brazen sea*, in which the priests washed their own persons. The distinction here is remarkable, and strongly shows the superior sacredness of the former. In the visions of Ezekiel the cherubim appear as the body-guard of the God and King of Israel, surrounding and supporting His throne; and in the remarkable apostrophe to the Prince of Tyre in the same prophet, where he is addressed as “the anointed cherub that covereth,” though we are not informed what he “covereth,” yet the word is the same as that applied to the action of the cherubim, covering or overshadowing the mercy-seat, and undoubtedly conveys the same idea.

In Egypt the sphinx couched before the pyramids, the sacred tombs of her early kings, and guarded the gates of her palace-temples. In India, Persia, and Assyria, the ordinary office of these magnificent forms was the same, and was thus perfectly in accordance with what we suppose to be the leading idea of the cherubim, that of guarding the sacred mysteries.

At the same time these figures are occasionally depicted in circumstances which it is difficult to account for, even on this explanation. In the embroidery of a robe at Nimroud, there is a winged bull, looking back, between two sphinxes, each of which raises one fore-paw on the bull’s body. We might suppose this to express the cherubic guardians forbidding the entrance of some being symbolized by the winged bull. But behind one of

them rears up an enraged lion, and strikes the sphinx with his open paw, the meaning of which we cannot pretend to understand. Priestly attributes seem, sometimes, assigned to the compound beings. We may here remark two figures embroidered on a robe at Nimroud.\* Two bearded priests are seen wearing the one-horned cap ; they are human to the waist, with bestial hind-parts, and a short curved dog's-tail, but the legs become those of a bird, and terminate in eagles' feet : they have the usual two pairs of priestly wings, stand erect in a human attitude, *present the fir-cone in the right hand, and hold the basket in the left.* The winged bull and the winged horse are occasionally figured in pairs, with the sacred tree between them, either kneeling or rearing towards it.



SYMBOLIC FIGURE.

A form of religious worship, which has prevailed in Chaldea and Persia from very early times, and which is not yet extinct, is the adoration of fire. At first, light and darkness were considered as two independent, original, antagonist principles, the rulers of the universe ; the former for good, the latter for evil. In the address of Jehovah by the prophet Isaiah to Cyrus, nearly a century and a half before he was born, there is an express allusion to this false notion, the origin of light and darkness being attributed to the creative fiat of God.

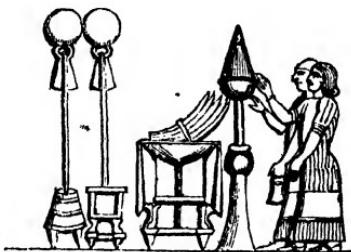
"I am the Lord, and there is none else, there is no God beside me : I girded thee, though thou hast not known me : that they may know from the rising of the sun, and from the west, that there is none beside me. I am the Lord, and there is none else. I form the light, and create darkness : I make peace, and create evil : I the Lord do all these things." (Isa. xlvi. 5—7.)

The reformation of this ancient form of superstition by Zoroaster went so far as to recognise a supreme overruling Deity, who had created two subordinate but mighty beings, typified by light and darkness respectively. The essence of this religion may be summed up in the doctrine said to have been given by Ormuzd, the good spirit, to Zoroaster in vision. "Teach

\* Layard's Mon. of Nin. pl. 44.

the nations," said he, "that my light is hidden under all that shines: wherever you turn your face towards the light, following my commands, Ahriman (the spirit of darkness) will immediately flee. There is nothing in the universe superior to light."

The adoration of the spirit of light soon degenerated into fire-worship, the idolatry of the Guebres or Parsees. The sun, as the most glorious luminary in the universe, was worshipped by prostration, at his rising, on the summits of mountains, and on the tops of lofty edifices. Fire, also, was an object of idolatrous homage, originally kindled from the sun's rays, and maintained from year to year, without being suffered to go out. Traces of this worship are seen in the later Assyrian monuments, as in the accompanying scene found at Khorsabad. A slender altar is surmounted with a cone, which,



FIRE WORSHIP.

being painted red, is supposed to represent flame. Before it stand two eunuchs, side by side, with their right hands elevated; one of them carries in his hand the sacred basket. On the opposite side of the altar is a table, covered with a table-cloth, on which is laid a bundle, probably of fragrant wood, to feed the sacred flame.\* The service is represented as within a fortified castle or intrenched camp.

Mr. Layard gives an engraving of another representation of fire-worship from Kouyunjik. Two eunuchs are again seen worshipping before the sacred fire on a slender altar, while behind them a man leads a goat to the sacrifice. In this, as well as in the Khorsabad scene, there is a table behind the altar, on which are placed objects, that look like bowls containing some fruit. Behind the table are two poles, from which two serpents are suspended by the neck, which carry on their heads an appendage closely like the conventional ostrich-feather, so generally worn by the idols of Egypt. This scene, also, takes place within a fortified camp. A chariot without horses, a camel, and men and eunuchs walking in procession, are also seen within the inclosure, but seem unconnected with the religious service.

Primeval astronomy had placed the serpent in the skies, and saw it with awe in the milky way, winding its colossal length across the arch of heaven; hence the close connexion of serpent-worship with star-worship. Job seems to glance at both, when he declares of Jehovah—

\* ————— A fire on all the hearth  
Blaz'd sprightly, and afar diffused, the scent  
Of smooth-split cedar, and of cypress-wood  
Odorous, burning, cheer'd the happy isle.”  
*Odyss. v. 68.*

" By his Spirit he hath garnished the heavens ; his hand hath formed the crooked serpent." (Job xxvi. 13.)

The ceremonies of fire-worship were regulated by a powerful sacerdotal class, called Magi. That they possessed high authority in Babylon we gather from Jer. xxxix. 3, 13, where "the chief magus" (for so *Rab-mag* should undoubtedly be rendered) is enumerated among the princes of the king.

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#### ON TAXES.

WE read in Scripture (Nehemiah iv. 17), that when the Jews returned from the captivity, and began to rebuild the walls of their city, they were so beset by enemies that they were forced to be constantly armed and on their guard ; and, for fear of a sudden attack, each man worked with one hand only, and the other hand held a weapon ready. In this way it would take at least two men to do the work of one. But the danger they were in obliged them to put up with this inconvenience.

Many countries in the East are at this day nearly in the same condition. They are so infested by robbers, chiefly Arabs, always roaming about in search of plunder, that no man can hope to escape being robbed unless he is well armed and on his guard. Travellers tell us, that when a husbandman goes to sow his fields, he takes with him a companion with a sword or spear, to protect him from being robbed of his seed corn. This must make the cultivation of the ground very costly, because the work which might be done by one man requires two ; one to labour, and the other to fight : and both must have a share of the crop, which would otherwise belong to one. And, after all, the protection of property must be very imperfect, for you may suppose the robbers will often come in such force as to overpower the defenders, and plunder the industrious of all the fruits of their labours. Accordingly, in these countries, there is very little land cultivated. Most of it lies waste ; the inhabitants are few—not one-twentieth of what the land could maintain ; and these are miserably poor. And all this is owing to the insecurity of property.

And the same is the case in all countries where the people are savages, or nearly savages. Most of the time, and labour, and care of a savage, is taken up in providing for his defence. He is occupied in providing arms for his protection, against those whom he is able to fight ; or in seeking hiding-places from those who are too strong for him. In the islands of New Zealand, several families are obliged to join together, and build their little cabins on the top of a steep rock, which they fence round with a trench and sharp stakes to protect them against their neighbours of the next village ; and after all, they are often taken by surprise, or overpowered. In such countries as that, there are a hundred times as many people killed every year, in proportion to their numbers, as in any part of Europe. It is true that there is not so much property lost, because there is very little to lose ; for people must be always exceedingly poor in such countries. In the first place, above half their time and labour is taken up in providing for their safety ; and in the next place, this is so imperfectly done after all, that they can never be secure of the fruits of their industry.

The remedy of this miserable state of things is to be found in settled government. The office of a government is to afford protection ; that is, to secure the persons and property of the people from violence and fraud.

For this purpose it provides ships of war, and bodies of soldiers, to guard against foreign enemies, and against pirates, bands of robbers, or rebels ; and also provides watchmen, constables, and other officers, to apprehend criminals ; judges and courts of justice for trials ; and prisons for confining offenders ; and, in short, everything that is necessary for the peace and security of the people.

The expenses of the army and navy, and of everything that government provides, are paid by the people ; and it is but fair that we should pay for all these things, since they are for our benefit. We pay taxes and government duties for these purposes. Taxes are the price people pay for being governed and protected. They correspond to the hire which the husbandman in eastern countries must pay to his companion who carries the spear or sword to guard him from robbers.

Some people do not understand this, or do not recollect it. Many are apt to think taxes quite a different kind of expense from all others ; and either do not know, or else forget, that they receive anything in exchange for the taxes. But, in reality, this payment is as much an exchange as any other. You pay money to the baker and butcher for feeding you, and to the tailor for clothing you ; and you pay the king and parliament for protecting you from being plundered, murdered, or cheated. Were it not for this, you could be employed scarcely half your time in providing food and clothing, and the other half would be taken up in guarding against being robbed of them ; or in working for some other man whom you would hire to keep watch and to fight for you. This would cost you much more than you pay in taxes ; and yet you may see, by the example in savage nations, how very imperfect that protection would be. Even the very worst government that ever was, is both much better and much cheaper than no government at all. Some of the Roman emperors were most detestable tyrants, who plundered and murdered great numbers of innocent men : yet even under their reigns there were not so many of their subjects (in proportion to their numbers) plundered or murdered in ten years, as there are among the New Zealanders, and other savage tribes, in one year.

You understand, now, that taxes are the hire or price paid to government in exchange for protection ; just as any other payment is made in exchange for anything we want.

There is, however, one important difference ; that other payments are left to each man's choice, but every one is obliged to pay the taxes. If I do not choose to buy shoes of a shoemaker, but to make shoes for myself at home, or to go without them, I am at liberty to do so : and the same with other such payments. But it is not so with the payments to government. If any one should say, "I choose to protect my own person and property myself, without any assistance, from soldiers, or sailors, or constables, or judges, and therefore I will not pay taxes ;" the answer would be : "Then go and live by yourself in the wilds of America, or in some such country ; or join some tribe of wild Indians, and live as they do : but, while you live with us, in a country which has a government, you cannot, even if you wish it, avoid partaking of the protection of government. The fleets and armies which keep off the foreign enemies from plundering the country, are a defence to you, as well as to us ; you are protected as well as we, by the laws and officers of justice, from the thieves and murderers, who would otherwise be let loose on society. Since therefore, the government must, whether it would or not, afford a share of its protection, it is fair that you should be obliged, whether you will or not, to pay your

share of its expenses. But if you are so foolish as not to like this bargain, you must leave the country, and go and live somewhere else in the wilderness."

It is quite fair, then, that as long as a man lives in any country, he should be obliged to submit to the government, and to pay the taxes: and how much each shall pay is determined by the government. There is one great difference between this exchange and all others; when you hire a man to work for you, you make your own bargain with him; and if you and he cannot agree as to the rate of payment, you will employ some one else instead. But the government of any country, whether it be a king, or a president, or a senate, or parliament, or, in short, whatever kind of government it is, must always have power to make all the people submit; since otherwise it could not perform the office of protecting them. It is not left to each person's choice, therefore, how much he shall pay for his protection, but government fixes the taxes and enforces the payment of them.

Many governments have made a bad use of this power, and have forced their subjects to pay much more than the reasonable expenses of protecting and governing the country. In some countries, and in this among others, the people are secured against this kind of ill-usage by choosing their own governors; that is, the Members of Parliament, without whom no laws can be made, or taxes laid on.

It is very right to require that the public money should not be wastefully spent, and that we should not be called on to pay more than is necessary. But many persons are not so thankful as they ought to be for the benefit which they enjoy, in living under the protection of a government, because they do not know, or do not consider, the wretched condition of those who are without any regular government. Of all the commodities we pay for, there is none so cheap, compared with what it would cost us to provide ourselves with it, as the protection which is afforded us by government. If we all made clothes and shoes for ourselves, instead of buying them of the tailor and shoemaker, our clothes and shoes would, indeed, be much worse than they are, and would cost us much more. But we should be far worse off still if each of us had to provide by himself for the defence of his own person and property. Such protection as he would be thus able to obtain, would cost a great deal, and be worth very little.

Much the greatest part, however, of the taxes that are paid goes to the expenses, not of the present year, but of past years; that is, to pay the interest on the National Debt. During our long and costly wars, much more was spent in each year than could be raised by taxes. Government, therefore, borrowed money of rich merchants and others, engaging to pay interest on this till it should be repaid, which most of it has not been, and perhaps never will be. The lenders therefore, received in exchange for their money, annuities; that is, a right to receive so much a-year out of the taxes raised by government; and these annuities, which we call government securities, or property in the funds, may be sold by one person to another, or divided among several others, just like any other property. When a poor man has saved up a little money, he generally puts it into the funds, as it is called, or deposits it in a savings' bank, which does this for him; he is then one of the government creditors, and receives his share of the taxes. You see, therefore, that if the National Debt were abolished by law without payment, many, even of the labouring classes, would lose their all; and the nation would not be relieved of the burden; since it would be only robbing one set of our countrymen for the benefit of another set.

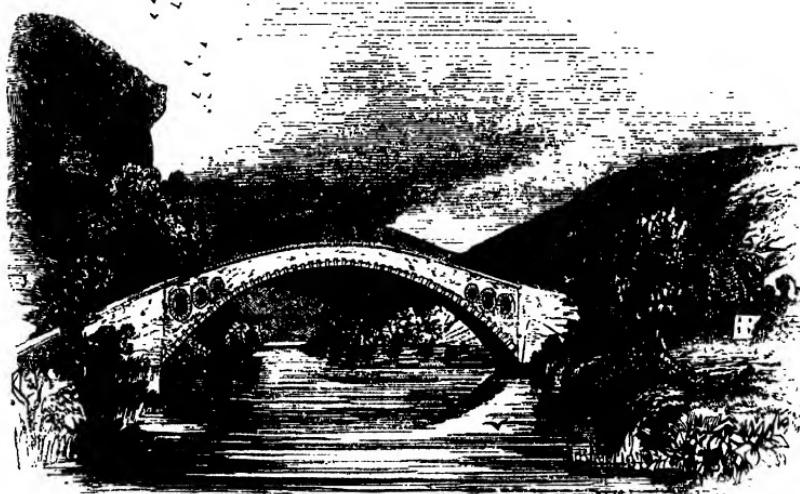
We may be sorry that so much money was formerly spent on gunpowder, which was fired off, and on soldiers' coats, and ships, which were worn out; but nothing we can now do can recall this, any more than last year's snow. The expense is over and past, and the taxes raised to pay the interest of the money borrowed, are not so much lost to the country, but only so much shifted from one to another. All of us contribute to pay this in taxes: and all government creditors, that is, all who have money in the funds, or in the savings' banks, receive a share of it as a just debt. Thus the taxes find their way back into many a poor man's cottage who never suspects it.

I have said that far the greater part of the taxes are raised for this purpose; that is, for paying the interest of the National Debt. The following calculation will make this clear to you; every twenty shillings paid in taxes are disposed of in about these proportions:—

|                                                                                                                                                                                 | £. s. d.      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Expense of the Army, Navy, &c. . . . .                                                                                                                                          | 0 7 2         |
| Civil List.—Sovereign, Judges, Ministers of State, and other public officers. Pensions and Sinecure Places, <i>i.e.</i> , those that have no duties belonging to them . . . . . | 0 0 10        |
| Interest of the National Debt . . . . .                                                                                                                                         | 0 12 0        |
|                                                                                                                                                                                 | <hr/> £ 1 0 0 |

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ACCOUNT OF THE PONT-Y-TU-PRYDD, OVER THE RIVER TÂFE,  
NEAR NEWBRIDGE, IN THE COUNTY OF GLAMORGAN.



AMONG the many bridges constructed in England during the last century, few are more interesting than the Pont-y-tu-Prydd, over the river Tâfe, on account of the boldness of the design, and the circumstances under which it was constructed. This celebrated bridge lies on the road from Lantrisant to Cardiff and Merthyr, which crosses the Tâfe at the village of Newbridge.

The name, "Pont-y-tu-prydd," which means literally, "Bridge by the Earthen House," is derived from a mud hut that stood near the site.

It was in 1746, that it was first determined to erect a bridge at a spot rather lower down the river; and William Edwards, who had gained some reputation as a country mason, was recommended as competent to undertake the work, which was commenced in the above year. This bridge consisted of three arches, and is said to have displayed considerable elegance of design; but about two years and a-half after it had been finished, it was completely swept away, during one of the great floods to which the Tâf, like all rivers in mountainous districts, is subject; the waterway being blocked up by trees and other impediments brought down from the uplands: the water rose to so great a height as to flow over the parapet, and the bridge gave way. As Edwards was compelled by his contract not only to build, but to maintain the bridge for a period of seven years, he had to resume his labour; and, in order to guard against the danger which led to the destruction of the first bridge (that of obstructing the channel), he conceived the bold design of spanning the river with one arch only. Its situation and dimensions were the same as those of the present bridge, and he had proceeded so far with the undertaking, that the parapets only were required to complete it, when another, but very different accident occurred, which again proved fatal to the structure. From the great rise in the arch, it was necessary to raise the roadway at each end, in order to facilitate the access. The quantity of material in the centre of the arch was so small, in proportion to that laid over the spandrels, that the pressure upon the haunches forced up the crown, and the whole was again reduced to ruins. This second failure would have made most men relinquish any further attempt, but it was not so with Edwards: possessing a persevering and ardent disposition, he determined on another effort to overcome the difficulty, and at length he succeeded in building the present bridge. It is, however, stated, that he consulted Smeaton on the subject. What amount of assistance was given by that eminent engineer is not known; but Edwards, either following his advice, or profiting by the last misfortune, took the precaution of relieving the arch of the great pressure, at the haunches, by placing in each spandril three cylindrical openings, from face to face of the bridge, and it is said the spaces between them were filled up with charcoal, by which means the object was completely accomplished.

The arch measures 140 feet between the abutments, and has a rise, or versed sine, of 35 feet. These dimensions give a diameter of 175 feet; and in the accompanying drawing the arch is shown a segment of that circle. At the time the author made his survey, he was unable to determine the form of the arch more precisely.

The width of the soffit is 15 feet 10 inches at the springing, and diminishing to 14 feet 5 inches at the crown, by six offsets on each face, varying from 2 inches to 3 inches in depth. The roadway is only 11 feet wide over the centre of the arch. The contrivance for diminishing the weight on the haunches appears to have succeeded perfectly. The bridge was finished in the year 1750, and has now stood for more than a century, a monument of the perseverance and talents of the builder.

The arch-stones, throughout each face, are of parallel width; they are 2 feet 6 inches deep, and vary from 6 inches to 9 inches in thickness, and from 12 inches to 18 inches in the depth of the bed. The soffit is all rubble masonry, two or three courses making up the dimensions of each arch-stone; and, from the slaty description of the material, little, or no

labour appears to have been necessary in forming the joints. The masonry of the spandrels and the parapet is of a similar description, being irregularly laid, the stones varying from 1 inch to 9 inches in thickness.

The two greatest floods which have happened, within the remembrance of the inhabitants, were in the year 1816, when the water rose 12 feet 6 inches above its ordinary level, and in 1829, when it attained nearly the same height.

The model of the centering upon which the arch was raised is still in existence, but there are no records of how it was struck, or any other particulars relative to the construction.

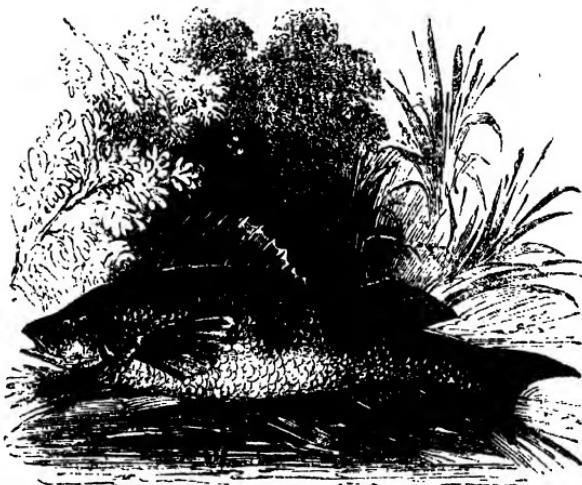
The bridge is built of hard and durable grey sandstone, from the quarries in the neighbourhood; the lime used was from the well-known Aberthaw cliff, on the north side of the Bristol Channel.

The narrowness of the bridge and the steepness of the ascent were found inconvenient and dangerous, and, about twenty years ago, the roadway was, in consequence, raised at each end, and the surface paved; but even now it is so steep, (the inclination being 1 foot vertical to 4 feet horizontal) that it is found necessary to use a chain and drag, so that when a carriage reaches the centre of the bridge, one end of the chain is attached to the hinder part of it, the other end being secured to the drag, upon which a boy generally places himself, so that as the carriage descends upon one side the drag is pulled up on the other, and thus relieves the horse in descending; without this contrivance, it would almost be impossible for a loaded vehicle to pass over in safety.

William Edwards was born in 1719; he was the youngest son of a small farmer, and had been, at an early age, occasionally employed in building and repairing stone walls, which he executed with much neatness and expedition. A workshop erected by him extended his repute in his neighbourhood; and a mill, which he afterwards built, introduced him to a knowledge of the principles of the arch. The bridge over the Tâfe, which was his first effort in bridge-building, gave him an opportunity of applying this knowledge, on a scale which he little anticipated, when he undertook the work: but it raised the country mason to a high place among the bridge-builders of his country. Three-quarters of a century elapsed before its equal, in span, existed in England. Edwards died in 1789.

Edwards erected several other bridges in South Wales, some of them of considerable magnitude, although not at all equal to his great work. The one of the largest span is that over the Tâfe, at Wychbree, the chord of which is 95 feet, with a versed sine of 20 feet, and there are others of 80 feet and 83 feet span respectively; and that of Glasebury, over the Wye, is a bridge of five arches. The experience which he had gained at Pont-y-tu-Prydd, led to many improvements in his practice, at those subsequent works, and enabled him, especially, to avoid the great rise in the arch, without impairing the stability of the structure; but the hollow cylinders in the spandrels were still retained in his large arches; they seem to have formed a feature in his favourite style, although they were not much adopted by others; but his signal success in the use of them accounts for and excuses their being carried too far for beauty.

## THE PERCH.



THE distinctive characters of the Perches proper are two dorsal fins quite separated, of which the fore one possesses only spinous rays, the hinder only flexible or soft ones. The tongue is smooth ; the mouth is armed with teeth, situated in both jaws, in front of the vomer or middle ridge of the palate, and on the bones of the palate itself; the fore gill-flap is notched below, and has its hind edge cut into small teeth like those of a saw ; the gill-cover is bony, and terminates in a flattened spine pointing backwards. The gill-archers are seven. The scales are rough, hard, and detached with difficulty.

The Common Perch is well known, not only to the angler, but to almost every country child ; for it inhabits most of our lakes and rivers, especially where the banks are steep, and is so bold as to bite at nearly any bait. Hence this is usually the first fish that rewards the infant angler's enterprise.

It scarcely yields to any of our native fishes in beauty ; its form is compact and powerful, and its colours attractive, especially when seen through the clear water in which it is playing. Its aspect, however, when drawn from the water, is determined and almost ferocious, particularly when the high and spinous dorsal-fin is stiffly erected.

The excellence of the Perch, as a table fish, is generally acknowledged ; in this respect, perhaps, it is exceeded by none of our fluvial species, with the exception of the Trout and the Salmon. Perch of five pounds are not uncommon, and they have been known to attain even double this weight. A fish of large size needs good tackle as well as skill in the angler, for it is powerful in proportion to its size. When Perch run large, a minnow, roach, or gudgeon is a successful bait ; but the more usual baits are worms and gentles ; fresh-water shrimps are much used by those who fish for Perch in the docks of London, where these fishes are both fine and plentiful. In still water, as that of lakes or ponds, the bait should be allowed to float in mid-water ; in rivers, nearer the bottom. In March, the Perch deposits its spawn, after which it will afford good sport to the

end of October ; a cool day with a fresh breeze to ruffle the surface, being most propitious.

The readiness with which this beautiful fish is taken is partly due to its voracity, in which it almost equals the ravenous Pike ; when hungry indeed, it will seize almost any object that is presented to it. A writer in the New Sporting Magazine, says that he has repeatedly taken a Perch with no other bait than a portion of the gills of one just captured, accidentally remaining on the hook, the line having been carelessly allowed to drop into the water while a fresh bait was being selected. "Red seems an attractive colour to them, and whether it presents itself in the blood of one of their former companions, or the hackle of a cock, is a matter of perfect indifference."

There are plenty of very fine Perch all along the Thames, but the most favourite resorts for these fish are the deeps near Twickenham, either above or below the lock at Teddington, and in some deep holes about half-way between the lock and Hampton Wick ; Perch have been taken in these places frequently as large as four pounds' weight each.

Very large Perch and Trout are taken in the rivers of Ireland, by a contrivance known as the *pooka*. It consists of a flat board, with a little mast and sail erected on it. Its use is to carry out the extremity of a long, stout line, to which are suspended, at certain intervals, a great number of *droppers*, each armed with a baited hook. Corks are affixed to the principal line to keep it floating, and from a weather shore, any quantity of hooks can thus be floated over the water. The corks indicate to the fisher when a fish is on a dropper, and in a small punt he attends to remove the fish and rebait the hooks. Two hundred hooks are sometimes used on one pooka, which affords much amusement and a well-filled pannier.

This beautiful fish appears to be common in the rivers and lakes throughout Ireland ; in Scotland, however, it is rare, and in the waters that dissect, as it were, the northern portion of that kingdom, it is quite unknown. On the continent, it has a much more northern range ; for large Perch, of five or six pounds in weight, are abundant in the lakes and rivers of Sweden, and afford good angling. The head of a Perch is said to be preserved in the church of Luehlah, in Lapland, which measures nearly twelve-inches from the point of the nose to the end of the gill-cover, which, according to the proportion of parts in ordinary specimens, would give the enormous total length of four feet for this fish. It is possible, however, that this may be the head of some other species.

Perch resort to pits, eddies, holes, the pillars of bridges, and mill-dams ; they frequent the floors of staunches early in the morning, where they may be taken in great numbers at break of day, by means of a casting-net ; in these places they work to meet the fresh water that oozes through.

The Perch has a tendency to ascend towards the springs of rivers, having a great repugnance to sea-water. It delights in clean swift streams with a gravelly bottom, not very deep ; it is seldom found at a greater depth than a yard below the surface. It is tenacious of life, though perhaps less so than the Carp ; it has been known to survive a journey of fifty miles, in the old days of travelling, when railways were unknown.

Like other "anglers' fish," the Perch is not very often seen on the stalls of fishmongers in London. In Billingsgate market it is, however, sometimes exposed, especially on Fridays, as it is bought chiefly by Jews to form part of their Sabbath repast. We believe that this fish is kept by the dealers in tanks, and that those which are not sold are frequently so

little injured by exposure, as to be returned to the water, where they soon recover.

O'Gorman describes the Perch as fond of noise, and as even sensible to the charms of music. One of his sons assured him that he had once seen a vast shoal of Perch appear at the surface, attracted by the sound of the bagpipes of a Scotch regiment, that happened to be passing over a neighbouring bridge, and that they remained until the sounds died away in the distance.

The Perch is a bold and fearless fish, and not a little destructive : small fry of all kinds are greedily devoured by him ; he roots up the spawn-beds to feed on the deposited ova ; small Roach and Trout are destroyed by him in great numbers, and even Trout of considerable size are often driven from their feeding-places near shore by this beautiful but tyrannical spinous-finned fish.

In the beautiful lake of Geneva the Perch is said to be subject to a singular accident. In the winter these fishes ordinarily remain at a considerable depth, where, from the superincumbent weight of so great a body of water, the air contained within the swim-bladder is much compressed. If now from any impulse a fish suddenly rises to the surface, the pressure being removed, the air forcibly expands, and not being able to find any outlet, the membranous bladder becomes greatly distended, sometimes to such a degree that it is forced out at the mouth of the fish, dragging the stomach, turned inside out, with it. In this sad condition, unable to sink, the poor fish floats a few days on the surface, dragging out a miserable existence, until death puts a period to its sufferings. If, however, the bladder be pierced when in this state, the contained air escapes, the viscera recover their proper position, and the fish is saved.

The Perch spawns at the age of three years, when it is about six inches in length ; the month of April is the season for this operation if the water be moderately shallow, but in deep water the spawning is later. In a Perch of two pounds the roe weighs seven or eight ounces, and contains, according to Harmers, 281,000 eggs, but according to Picot, nearly a million ; the number varying according to the age of the fish. Large and old fishes contain more ova than the smaller ones, which is not surprising, since the individual eggs are of the same size in both ; they are very minute, and have been compared to poppy seeds.

The Perch, when seen alive in a clear stream, is, as we have said, a beautiful fish. Perhaps the elevation of its back may be thought to detract from its elegance of form, giving it a humped appearance. The back rises somewhat abruptly just behind the head, after which it tapers to the tail : the height of the body, independent of the fins, is about twice that of the width. The general hue of the upper parts is a rich olive, crossed by five or six dark brown bands, which become inconspicuous after death. The sides have a brassy tinge, with pearly and steel-blue reflections about the cheeks ; the under parts are pure silvery white. The two dorsal fins, and the pectorals, take nearly the same hues as the parts from which they respectively arise ; but the caudal, the anal, and the ventrals have their rays of the most brilliant scarlet, especially the latter, and the membranes are tinged with the same hue. The iris of the eye is golden. The lateral line is distinct, running in a slightly arching line from the gill-flap to the tail-fin.

Mr Yarrell mentions, as having been found in the waters of particular soils, specimens of the Perch almost entirely white ; and others of an uni-

form slate-grey hue with a silvery appearance. The latter variety is obtained in the ponds of Ravenfield Park, in Yorkshire, and is found to retain its peculiarity of colour, when transferred from its native ponds to other waters.

Yet another variation of hue, associated with another curious peculiarity, is ascribed to the Perch of Malham, or Maum Tarn, in Yorkshire, by Hartley, the author of an account of some natural curiosities of that neighbourhood. Speaking of these fishes, he says, "There is certainly a very extraordinary phenomenon attending them, the cause of which I leave to naturalists to ascertain. After a certain age they become blind; a hard, thick, yellow film covers the whole surface of the eye, and renders the sight totally obscured. When this is the case, the fish generally are exceedingly black; and although, from the more extreme toughness and consistency of the membrane, it is evident that some have been much longer in this state than others, yet there appears no difference either in their flavour or condition. Perch of five pounds weight and more have been taken. They are only to be caught with a net; and appear to feed at the bottom, on Loach, Miller's Thumb, and testaceous mollusca."

The scales of the Perch have their hinder, or free edge, set with fine crystalline points, arranged in successive rows, and overlapping. Their front side is cut with a scolloped pattern, the extremities of undulations of the surface that radiate from a common point behind the centre. These undulations are separated by narrow furrows, across which, contrary to the ordinary rule, the close-set concentric lines that follow the sinuosities of the outline are not visible. Under the microscope they look as if they had been split in these radiating lines, after the whole number of layers had been completed, and that the fissures had then been filled with new transparent substance.

The nostril in the Perch has two external openings, surrounded by several orifices, through which issues a mucous secretion for the defence of the skin against the action of the water. "The distribution of the mucous orifices over the head," remarks Mr. Yarrell, "is one of these beautiful and advantageous provisions of Nature which are so often to be observed and admired. Whether the fish inhabits the stream or the lake, the current of the water in the one case, or progression through it in the other, carries this defensive secretion backwards, and spreads it over the whole surface of the body. In fishes with small scales, this defensive secretion is in proportion more abundant; and in those species which have the body elongated, as the Eels, the mucous orifices may be observed along the whole length of the lateral line."

#### MEROPS.

A YOUNG eagle said to a thoughtful and very studious owl, "It is said there is a bird called Merops, which when it rises into the air, flies with the tail first, and the head looking down to the earth. Is it a fact?"

"By no means," said the owl; "it is only a silly fiction of mankind. Man himself is the Merops; for he would willingly soar to Heaven, without losing sight of the world for a single instant."—LESSING.

## WILD FLOWERS.

CORN MARIGOLD. (*Chrysanthemum segetum.*)

THE bright Corn Marigold is one of the largest and gayest of the starry golden blossoms which are so numerous during July and August. It is often called Yellow Ox-eye, Golden Corn-flower, and Yellow Corn, and is the Gold or Goules of the early English poets. It is about a foot high, and is frequent enough in the corn-fields of our native land to prove, in some districts, a very troublesome weed to the agriculturist, sometimes almost exterminating the whole crop, on which much labour and cost have been bestowed. In many countries of Europe, as in France and Germany, it is, however, far more abundant than in ours. It is a very handsome plant, and would doubtless have become a favourite garden-flower, but that cultivation never renders it double.

We have but one other wild species of the *Chrysanthemum* genus, and that is the common flower of almost every dry pasture, the Ox-eye daisy (*Chrysanthemum leucanthemum*). This is also called, by country people, Moonwort, Bull-daisy, and a variety of familiar names. It has white rays around a yellow disk, and, growing often to the height of a foot and a half, it quite gives a white tint to the meadows during June and July.

The name of the genus is derived from two Greek words, signifying gold and flower; and the Germans term these plants *Gold-blume*, while

the French call them *Chrysanthème*, and the Italians *Crisantero*. The species so ornamental to our gardens in autumn, is the Chinese Chrysanthemum. These plants are, in the esteem of the Chinese, second only to their dwarf trees. "So high," says Fortune, "do they stand in favour with the Chinese gardener, that he will cultivate them extensively, even against the wishes of his employer. I was told that the late Mr. Beale used to say, that he grew Chrysanthemums in his garden for no other purpose than to please his gardener, not having any taste for them himself."

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#### WATER SPOUTS.



THE Ocean presents inexhaustible subjects of contemplation to those who delight to trace the wonderful works of God. "They that go down to the sea in ships, that do business in great waters; these see the works of the Lord, and his wonders in the deep. For he commandeth and raiseth the stormy wind, which lifteth up the waves thereof" (Ps. cvii. 23—25.) Among the more striking phenomena connected with the ocean are Water Spouts, or sea-whirlwinds of magnificent appearance. The first symptom of their occurrence is, generally speaking, a violent disturbance of the sea immediately below some dark cloud. Throughout a space perhaps of a hundred yards diameter, the waves are whirled round with great rapidity, and tend strongly towards a centre, at which there is quickly accumulated a large mass of water or aqueous vapour, which rises with a spiral movement in a conical shape towards the cloud. At the same time there is formed in the clouds above, a similar cone, but in an inverted position. These two cones gradually approach each other, and at length unite; they are, however, not stationary, but are carried to and fro by the wind, and sometimes burst asunder with a loud noise. While the sea and sky are thus united, the appearance is remarkably grand, the whole column being of a light colour near its axis, but dark along the sides, thus giving it a hollow appearance. The course of the sea water in the interior can sometimes be

distinctly seen, moving along the column as smoke up a chimney. The spout is often formed and broken up several times successively in the same spot, the agitation and boiling of the waters continuing the whole time. The danger to ships is imminent, for no vessel coming within the vortex of the waters could escape damage; while in the case of small vessels it might prove their utter destruction. Captain Beechy thus describes the narrow escape of his vessel off Clermont Tonnere, near the Gambier Islands. "The Water Spout approached us amid heavy rain, thunder and lightning, and was not seen until it was very near the ship. As soon as we were within its influence a gust of wind obliged us to take in every sail, and the top sails, which could not be furled in time, were in danger of splitting. The wind blew with great violence, momentarily changing its direction, as if it were sweeping round in short spirals. The rain, which fell in torrents, was also precipitated in curves with short intervals of cessation. Amidst this thick shower the Water Spout was discovered extending in a tapering form, from a dense stratum of cloud to within thirty feet of the water, where it was hid by the foam of the sea, being whirled upwards with a tremendous gyration. It changed its direction after it was first seen, and threatened to pass over the ship, but being diverted from its course by a heavy gust of wind, it gradually receded. On the dispersion of this magnificent phenomenon, we observed the column to diminish gradually, and at length to retire to the cloud from whence it had descended."

Water Spouts are of various dimensions. The visible portion varies in height from two thousand to six thousand feet. The size and colour of the column also greatly vary. The lower portion of those seen at sea has been observed from one hundred to one thousand feet in diameter, the middle is sometimes not more than two or three feet. The larger the columns, the longer they endure. They do not generally last more than half an hour, during which time they move along at an uncertain rate. Sometimes they have passed over thirty-seven English miles in one hour; at other times, not more than eight or ten; and occasionally they remain nearly stationary. These spouts have also a motion of greater or less rapidity on their own axes. They are always attended with electrical action, and in many cases light noise and a sulphureous smell accompany them. Yet they do not affect the magnetic needle in ships, even when they actually pass over the vessel. The phenomenon closely resembles, if it is not identical with, the Whirlwind, in which arid plains and deserts raise pillars of sand and dust, of a form very similar to that which is in this case assumed by water. Pillars of snow are also sometimes raised by the wind. Captain Lyon, while wintering in the Arctic Regions, noticed one moving over the ice. "The circumference of the column of loose snow which was drawn into the vortex of the Whirlwind was at first very inconsiderable, but increasing rapidly, it assumed the appearance of a small water spout." Hence it appears that the water spout is not rightly named, water being only an accidental feature of it. Professor Oersted defines it as "a strongly agitated mass of air which moves over the surface of the globe, and revolves on an axis, one extremity of which is in the earth and the other in a cloud." He suggests that the term "storm pillar" would be more appropriate.

The effects of one of these storm pillars on land are strikingly shown in the account of one which occurred on the 6th July 1823, at a village near St. Omer, in France. In its progress it broke down the hedge of a dwelling-house, overturned a barn, and gave the house, which was solidly built, a shock which the farmer compared to that of an earthquake. It had, in

breaking the hedge, tore asunder and carried off the tops of the strongest trees, from twenty to thirty of which were overturned in such a manner as to prove that the motion was rotatory; others were lifted up and cast upon the higher branches of trees from sixty to seventy feet high. It uprooted a large sycamore, and carried it to a distance of six hundred yards; then continuing its course, in the manner of a ball that strikes the earth, and rebounds, it threw down the roofs of three houses, and lifted up several large trees. The labouring people, in order to avoid the danger, threw themselves flat on the earth, and held fast by their ploughs. There are many similar accounts of the remarkable power of the whirlwind in uplifting heavy materials from the surface of the earth and carrying them to a considerable distance. Some years ago a whirlwind occurred in Derbyshire, which tore up plantations, levelled barns, walls, and miners' cots, tore up large ash-trees, carrying them from twenty to thirty yards, and twisted the tops from the trunks, conveying them to the distance of from fifty to a hundred yards. Cows were lifted from one field to another, and injured by the fall; miners' tubs, wash-vats, and other materials were carried to a considerable distance, and forced into the ground.

The Whirlwind on land possessing such extraordinary force in lifting solid materials, of course exerts a similar power when it occurs at sea, in raising the waters of the ocean. That the whirlwind and the water spout are the same phenomenon is evident from the fact, that when a previously dry whirlwind meets a pond or lake in its way, it licks up the waters in an instant. The harbour of Christiansöe was once swept out so fully as to leave a large portion completely dry. Fishponds have been emptied by the storm pillar, and their contents transported to a distance, thus giving rise to those showers of fishes and frogs which have excited so much astonishment.

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#### JOE COLLINS; OR, DELAYS ARE DANGEROUS.



**JOE COLLINS** was the son of a hard-working man, whose business it was to attend to a water-mill on the farm of a respectable farmer in a village in Cambridgeshire. Joe was a sharp active boy, always professing readiness to obey, but commonly neglecting to do so; in consequence of which he frequently incurred the anger of his father, and was the cause of much inconvenience to him, and sometimes even of more serious losses. If Collins commanded him to take the meal to the hog, "O yes, father! to be sure I will," was the immediate reply; but too often a pretence offered itself of

deferring to obey, and with his usual conclusion—"it will do just as well a quarter of an hour hence," he set about something else, and if the poor pig failed to make his hunger known to any one else, he lost his breakfast.

"Draw the hen-coop under the shed, Joe; I see a kite hovering in the air."

"I will, father, directly;" but Joe waited a minute or two only to throw a handful of parsley to his rabbits; and the loss of a chicken or two was the consequence.

"Look to the trimmers that were set last night, Joe; the wind blows so fresh, and is so shifty, I dare not leave the mill."

"I'm gone," cried Joe, and off he darted; but according to his reasoning the delay of a few minutes could make no difference, he would finish gathering the vegetables before he went. Other occupations then came in the way, and "somehow or other," though he never intended it, he forgot his father's order altogether.

The trimmers consequently remained unattended to, and when Collins came to examine them next day, the fish had either been stolen, or the hooks had been broken off by accident—at all events no pike were to be seen.

"Mend that break in the hurdles at the end of the mill-field, that the sheep may not get through."

"That I will, you may depend upon it," was the prompt reply; but, according to custom, the intention was not fulfilled—a straggler escaped from the adjoining meadow, and was drowned in the stream.

Collins had frequently and severely chastised him for his fault, but still Joe remained incorrigible. One morning his father having caught some very fine tench, and being desirous of marking his gratitude to the squire's lady, who had been very kind to his family during an illness which had afflicted them, bade him take a brace of the largest and fattest to her, with his duty, and a hope that she would be pleased to accept them. He gave him strict charge at the same time to make all the haste he could, that he might reach the Hall before Mrs. Danvers took her drive, as according to the report he bore of the state of his little brother, that lady would return such directions for his treatment, or order such medicines as she thought proper. For the first mile, Joe turned neither to the right hand nor the left, but kept a steady and uniform pace. As the shorter way, he resolved to cross a field, near which another mill stood, which was inhabited by a family he was well acquainted with. At first he checked the inclination to take a peep at what they were doing; "No, I won't stay now," said he to himself, "I can call as I come back;" he walked on—stopped—"It won't take me a minute; Tom may be gone out in another hour or two, and a minute can make no difference."

So saying he ran towards the mill. "What are you all about?" said he, putting his head into the low apartment, which was strewn with rushes.

"Making mats," replied one of the boys, "for the squire's lady. We have just finished, and then we shall take them to the Hall."

"Shall you?" cried Joe, well, that's lucky; I'm going there—how long shall you be before you're ready?"

"Not five minutes," returned Tom, the eldest boy.

"Then I'll wait for you," cried Joe, "I should like to see how you finish that off;" so saying, he set his basket under the table, and was soon engrossed in watching the skill of his companions.

Ten minutes or more, however, elapsed before the work was completed;

they then all sallied forth, and hurrying along they reached the Hall as the carriage was driving up to the principal entrance.

"Run, Tom, run," cried Joe in alarm, "or we shall be too late." And such certainly would have been the case had not Mrs. Danvers perceived them. Beckoning them to approach, she stood on the steps to receive them. "How is your little brother?" said she, addressing Joe.

Joe answered as he was desired, and then delivered his message respecting the tench, adding, as from himself, "they were the finest father had caught for a long time."

"I am very much obliged to him," said Mrs. Danvers; "let me see them—perhaps they may save my ordering fish to-day at P——h."

Joe placed his basket on the ground, and kneeling on one knee, eagerly put in his hand to draw forth his present. In an instant he coloured deeply, searched this end, now that, and then hastily pulled out the grass which it contained. No fish were there. He looked with consternation first at the basket, then at the lady, then again at the basket, and then at his companions.

"Surely," said Mrs. Danvers, "there could not have been any fish in the basket; your father must have omitted to put them in."

"O, no! he did not," sobbed Joe; "I helped to put them in—just here—and as beautiful a brace of tench they were as ever were seen."

"And has the basket been in your hand ever since?" asked Mrs. Danvers.

At first Joe was going to say that it had, for he had really forgotten that such had not been the case: the truth then flashed on his mind, he checked himself, hesitated, and again coloured deeply. Mrs. Danvers repeated her question. "No, ma'am," said he in a low voice, and hanging down his head, "I laid it down under Mr. Simpson's table whilst I waited for Tom and Robert."

"Then as sure as can be," cried the boys in a breath, "our cats got them; we are obliged to keep three, we have so many rats, and they are sad thieves, they let nothing alone."

"And I remember now," said Joe, "that when I took up the basket it was lying on the side, and some of the grass was on the floor; but I never thought to look whether the fish were safe. O, what will father say!"

Mrs. Danvers happened to know a little about Joe's failing, and she now gathered the whole truth from him. "Joe," said she, when he had finished, "I cannot but say you have acted very improperly, and deserve the punishment your father may be disposed to inflict upon you."

Joe burst into tears; "I'm sure I dare not go home," sobbed he, "he will beat me so."

"I will see if I cannot prevent that," said Mrs. Danvers. "I will go and speak to him myself; but only in the hope that this escape from a severe chastisement may have a good effect upon you. I shall stand pledged for your amendment, you must recollect, if he spares you at my request; and surely you will not allow my word to be forfeited, though you have been neglectful of your own."

Joe summoned courage to look at her, but he did not dare to speak.

"I see you understand me," said she kindly, "and I understand that look to be a promise to me. Mind then what I say to you, for I shall not be deceived twice in my expectations."

Joe almost trembled under the calm and serious gaze that he felt was fixed on him, and at the tone of voice in which the words that accompanied that gaze were spoken.

"The loss of the fish in itself is trifling, and I am as much obliged to your father for his intention, as if I had benefited by it: but the fault is you, which occasioned that loss, is a great one. To obey instantly the commands you receive is a duty; and not to do so upon the plea of fulfilling them presently, is both foolish and presumptuous. The opportunity to obey, once slighted, may never again be afforded; and the severest regret may be insufficient to atone for the evil consequences of former neglect. Never forget that while 'delays are dangerous,' obedience is both safe, and in the end pleasant; and you may take it as a rule from me, that the boy who despises the word of an earthly parent, will have no scruple hereafter in trampling upon the command of his Father who is in heaven, who will surely punish his disobedience, and 'none shall let.'"

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#### MY LIBRARY.

"Having no library within reach, I live upon my own stores, which are however, more ample, perhaps, than were ever before possessed by one whose whole estate was in his inkstand."

My days among the dead are past;  
    Around me I behold,  
Where'er these casual eyes are cast,  
    The mighty minds of old;  
My never-failing friends are they,  
    With whom I converse day by day.

With them I take delight in weal,  
    And seek relief in woe;  
And while I understand and feel  
    How much to them I owe,  
My cheeks have often been bedewed  
    With tears of thoughtful gratitude.

My thoughts are with the dead; with them  
    I live in long-past years;  
Their virtues love, their faults condemn,  
    Partake their hopes and fears,  
And from their lessons seek and find  
    Instruction with a humble mind.

My hopes are with the dead; anon  
    My place with them will be,  
And I with them shall travel on  
    Through all futurity;  
Yet leaving here a name I trust,  
    That will not perish in the dust.

SOUTHEY.

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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A FEW WORDS ON THE MUSHROOM TRIBE.



BOLETUS EDULIS AND AGARICUS PROCRUS.

I NEVER make any lengthened stay in a house in the country, without feeling how great are the advantages of leisure which such a home affords. In farmhouses certainly, as well as in some others, the household are mostly occupied from morning till evening. In many country dwellings, however, there seems, from the absence of interruptions, from the early hours, the

quiet and the sunshine, a kind of holiday life, which is soothing and delightful to those whose ordinary home is amid the cares, and business, and visitings, and distractions of a city. But if such a home is to be made favourable either to improvement or enjoyment, the long hours of leisure must be well employed. A great physiologist has told us how often in the upper and middle classes of society the health and spirits suffer and are finally lost for want of some pursuit, some object in life which may be earnestly followed. He has told that nervous and other maladies beset some whose chief business in the day is to complete the netting of a purse; and we, when looking at the performances of young ladies in Berlin wool, have, sometimes, as the rich crimson tint met the eye, thought of the playful remark of one who said that such embroideries were stained with the blood of murdered Time. We would not deprecate these feminine pursuits, they are truly valuable as means of recreation; and we have sometimes smiled at hearing some of the other sex undervalue them, when we have known that these works of art have been wrought during the very hours in which they themselves were doing nothing. Women can happily work while they converse, and thus Time, precious Time, may often be well occupied in these things. But all earnest thoughtful persons need something higher than this to interest them—something which demands greater thought, and has a more important purpose. Most of all do those who live in the country need it, for they are deprived of those various means of intellectual activity which, even in a provincial town, are in constant operation, and which, by gathering many intelligent persons together, aid materially in mental improvement.

To those who live in the country, we would most earnestly recommend the study of some department of natural history. Trees are waving, flowers are blooming, birds are singing, and insects are revelling around them. The very pebbles in their pathway have a history of the past within them; the stream which is flowing by them has its shell-fish and zoophytes most wonderfully adapted to their element, most singularly constructed for life and nutrition. God made them all, and pronounced them good, and we need only to examine them to find how worthy they are of the praise of the Creator.

There is something very soothing to the mind in the study of nature, and so happily does it influence the thoughts, that Priest declares, that in all his extensive practice among the insane, he never met with one who was a naturalist. There are many branches of natural history, too, which immediately affect our physical comfort and welfare, and may be made subservient to domestic uses. A good botanist could point out to the poor in his neighbourhood, many roots and other portions of various plants, which could be used during a season of scarcity; and might dissuade from the medicinal uses of some of those "simples," administered in villages, which are positively hurtful, and often highly dangerous to the invalid when given without an accurate knowledge of disease. Southey mentions that his aunt, Miss Tyler, once effected a wholesome and curious innovation in the poor-house, by persuading the inmates to use beds stuffed with beech-leaves, according to a practice in some parts of France; and whatever may be the knowledge which we gain for ourselves, we may, if benevolently disposed, render it available to the good of others.

Any one who had leisure to bestow a careful and patient attention on the plants of the mustard tribe, might find in these wonderful and beautiful objects a great source of interest, and might also be serviceable to the

neighbourhood in which he resided by imparting his knowledge. Owing to the ignorance and prejudice which at present prevail in this country respecting this tribe of plants, an immense amount of food is annually wasted, and a large source of employment is lost to the poor. Dr. Badham, in his valuable work on the Esculent Funguses of Britain, remarks, "I have this autumn, myself, witnessed whole hundred-weights of rich wholesome diet rotting under trees; woods teeming with food, and not one hand to gather it; and this perhaps, in the midst of potato blights,

poverty, and all manner of privations, and public prayers against imminent famine. I have indeed grieved when I have considered the straitened condition of the lower orders this year, to see pounds innumerable of extempore beefsteaks growing on our oaks in the shape of *Fistulina hepatica*; *Agaricus fusipes* to pickle in clusters under them; Puff-balls, which some of our friends have not inaptly compared to sweet-bread, for the rich delicacy of their unassisted flavour; *Hydnus* as good as oysters, which they somewhat resemble in taste; *Agaricus deliciosus*, reminding us of tender lamb-



FISTULINA HEPATICA.



AGARICUS DELIOSUS.



AGARICUS ORCELLA.

kidney; the beautiful Yellow Chanterelle, that *kalon Kagothon* of diet, growing by the bushel, and no basket but our own to pick up a few specimens in our way; the sweet nutty-flavoured *Boletus*, in vain calling himself edulis, where there was none to believe him; the dainty *Orcella*, the *Agaricus heterophyllus*, which tastes like the craw-fish when grilled; the red and green species of *Agaricus* to cook in any way, and equally good in all."

The reader unacquainted with the subject will be surprised to learn the value of funguses as a marketable commodity in some of the countries of

Europe. In Rome alone, so great is the consumption of this kind of vegetable diet, that not less than 140,000 pounds weight are annually used there as food, and their worth is estimated at 4,000*l.* sterling, and this in a population of 156,000 persons. The funguses of Great Britain are not less fitted for diet than those of Italy, and Dr. Badham thinks it likely that no country is richer than our own in esculent species, upwards of thirty of these abounding in our woods. Were they eaten as they might be, we might indeed with Mons. Roques, call them "the manna of the poor."

In Rome, an officer appointed by the government is called the Inspector of the Funguses, and it is his business to examine all those brought into the city from its vicinity. He is also empowered to fine or imprison any mushroom-gatherer who refuses to submit his plants to his inspection. Not only is it his duty to see that the plants are of wholesome species, but if he detects any stale mushrooms in the baskets, he immediately orders them to be thrown into the Tiber, their freshness being an important condition of their wholesomeness.

But our readers will say that Toadstools and various noxious kinds of fungus, are so similar to the edible mushrooms, as to render any ignorance in the matter highly dangerous in using them. We are not urging a slight acquaintance with the tribe, but a careful study of them: still the idea of danger connected with them is greatly exaggerated. In the immense majority of cases our mushroom plants are harmless. "The innoxious and esculent kinds," says Dr. Badham, "are the rule; the poisonous, the exception to it." "We take," he says, "our potatoes for the table out of the deadly family of the Solana; we select the garden from the fool's parsley; and we do not hesitate to pickle gherkins, notwithstanding their affinity to the squirting cucumber, which would poison us if we were to eat it." The catable species are all clearly described, and in the work to which we refer, are also so well figured, as that they may be distinctly recognised. Nor is it a little remarkable that that frequent species of the fungus tribe, the common mushroom (*Agaricus campestris*), the Pratiola of the Italians, which we fearlessly purchase from the villager for ketchup, and other culinary uses, is almost the only one condemned by the Roman Inspector to be thrown into the Tiber. Here every woman in the village would think herself competent to decide on the species; "whilst," says our author, "many hundred baskets of what we call toad-stools are carried home for the table, this species is held in such dread, that no one knowingly will touch it. It is reckoned one of their fiercest imprecations," writes Professor Sanguinetti, "amongst our lower orders, infamous for the horrible nature of their oaths, to pray that one may die of a Pratiola." Yet in our country, notwithstanding its general use, an accident rarely occurs from any mistake in the species, notwithstanding its variety of form and general appearance; and far less discrimination would be required to identify several other species than this; for many are so obviously different from all others, that it would be impossible to confound one with another.

The exquisite beauty both of form and colour exhibited by some of the larger mushrooms might, independently of any other consideration, render this tribe worthy our attention. Some of them have hues like those of the peacock's tail, others are of richest violet, or most delicate lilac, or green, or yellow, or orange, or scarlet, or buff, or white, and polished as the finest ivory. And what delightful scenes and tones of nature present themselves to those who walk abroad, with eye and heart open to its influences, and with an ear awakened to its rich and varied melodies! What music is whispered



AGARICUS CAMPESTRIS.

by leaves and streams in field or wood! what vistas of beauty lie among the far-off purple hills! how many wild flowers give us their odours, and bend to the wind in attitudes of grace, and preach a lesson to the heart, of the care of Him who formed them! The very toad-stools, as we call them, have colours richer even than those of the flowers, and we need not fear to find them the resting-places of the bloated reptile to which their name refers. Dr. Badham, however, mentions that an anonymous Italian author, asserts that in Germany toads have been actually seen sitting on their stools; but, as the Doctor humorously remarks, even in Germany it must be admitted that they do not use them as frequently as we might expect, had they been created for this end. Spenser, in his Faëry Queen, takes the name as significant—

“The grisly todestool grown thereto might you see,  
And loathed paddocks lording o'er the same.”

The name of paddock\* for toads is still in common use in the North of England and in Scotland.

“In that most grisly and ghastly wax-work exhibition at Florence,” says the Doctor, “representing a charnel-house filled with the recent victims

\* “Paddock calls—Anon : Anon :”—SHAKSPEARE.

to a raging plague in every stage of decomposition, the toad and his stool are not forgotten ; but the artist who had here to deal with matter, and to consult what it would bear, has not put his toads upon brittle stools, lest giving way, both should come to the ground ; he has been content to convert them into toad-umbrellas, and to spread them as a covering over their heads."



CANTHARELLUS CIBARIUS.

But the Fungus or Mushroom tribe comprehends a large number of plants besides mushrooms and toad-stools. Myriads of microscopic funguses crowd every decaying object, while on the one hand we find the fungus so large as that the arms of a tall man could scarcely enclose it ; on the other, the grain of sand would far exceed it in size. These plants grow with a degree of rapidity quite unknown in any others, acquiring the size of many inches in the course of a night, especially in the state of atmosphere which succeeds a storm. Fries, who is a high authority on the subject, says, "Their sporules (seeds) are so infinite that in a single individual of *Reticularia maxima*, I have counted above 10,000,000 ; so subtle that they are scarcely visible to the naked eye, and often resemble thin smoke ; so light (raised, perhaps, by evaporation into the atmosphere), and are dispersed in so many ways, by the attraction of the sun, by insects, wind, elasticity, adhesion, &c., that it is difficult to conceive a place from which they can be excluded."

It is not alone on the decaying tree that the fungus springs up. Sometimes it even arises on the larger mushroom, or clusters in numbers on oranges, or plums, making on these and other fruits and substances, what we term mildew. The mouldiness of bread or cheese, or of the preserved fruits which have been kept too long ; the blight and rust on corn ; the ravages of "dry rot," which are so destructive to wooden buildings, are all caused by the growth of minute funguses. There are dark ink-like spots on the leaf of the maple produced by these plants ; and orange, or yellow, or velvety patches, arise on the rose-leaf, or on the foliage of the poplar or willow tree, or might seem, from their redness, to be little beads of coral, on the leaves of other plants. Some funguses crowd beneath the bark of plants, others between the opposite surfaces of leaves. There are shaggy coats hanging about the wine or beer cask, and these are of this tribe ; and one which has lately been renowned as the Vinegar Plant (*Penicillium glaucum*) may be produced at will, by placing an admixture of treacle, sugar, and water in a warm place. The housewife complains that her beer and vinegar are mouldy, and lo ! a fungus has produced this effect. The farmer loses his expected crop, for a fungus has spread over the roots of the plants, and as in the case of the species, called in France, "La mort du safran," has destroyed the whole worth of the produce. This fungus, which attacks the bulbs of the cultivated saffron and crocus, spreads with the greatest quickness over the field, and is so destructive that the smallest quantity of earth from the infected soil is said to be capable of communicating this plague, even if the ground were not planted with saffron for twenty years after. Another fungus, called the Willow Cryptomyces, is equally pernicious to the Willow tree. Speaking of this species, Dr. Greville says, "A cluster of willows which was attacked in the beginning of the season by this plant has been nearly destroyed by it ; and from the rapidity of its progress, I have no doubt that a whole plantation might in the course of a couple of seasons be rendered

good for nothing. At a little distance, the affected branches look as if they were dry, scorched, and rotten."

Funguses attack books, the object-glasses of telescopes, and neglected window-panes, growing in the latter cases on the particles of dust which insinuate themselves into the glass. The wardrobe, the contents of the dairy, the leather of shoes and portfolios, have each their fungus growth; though it is remarkable that mouldiness may be averted by any strong perfume.

Our very teeth are beset with these plants, and a writer in Silliman's Journal, states, that he rarely finds a person whose teeth are quite free from these microscopic objects, which he says are not to be removed by any species of dentifrice in common use, nor even by frequent brushings, but which yield only to the application of soap.

Funguses are most frequently found on decayed animal or vegetable matter, but there are some which will grow on a living animal, and gradually destroy it. One kind is described as "having a particular fancy for the hoofs of horses, and for the horns of cattle, growing on these only." The disease termed muscadine, which is fatal to so many silkworms, is the result of the growth of a fungus on their bodies; while healthy caterpillars, if brought within reach of a silkworm, which has been killed by this disease, soon takes the infection, and dies. The well-known vegetating wasp, a species of *Polystrix*, becomes a prey to a fungus which rises out of its living structure, and soon numbers it with the dead; while some of the tribe visit "the very wards of our hospitals, and grow out of the products of surgical disease."

Some of these very minute fungus plants exhibit great beauty when seen under a microscope. Dr. Badham has described one which is common on a species of mushroom, "spreading over some of the Russulae in decay, especially if the weather be moist, like thin flocks of light wool, presaging on the second day a bluish tint on the surface." Under a microscope this was seen to consist of myriads of little glass-like stalks, forked into numerous clear twigs, each ending in a little clear knob, which, when it bursts, scatters the seeds. These adhere to the sides of the stalks like so many tiny limpets.

Another very beautiful little fungus, which was gathered by Dr. Mantell on Clapham Common, and has since been found elsewhere, grows on flints, and is, to the naked eye, a small snow-white speck, not more than one-fourth of the size of a pin's head. When magnified it appears like a little cup with a cover, beautifully marked with radiating lines. On being punctured it emits a blood-red liquid, filled with spores. This plant, the *Craterium pyriforme*, was sent by Dr. Mantell across the Atlantic, and was still living when it reached his friend in America, and this writer remarks that he has had pebbles on his mantelpiece for months, and that the vegetable upon them was yet alive, and bled as usual upon puncturing.

Another very singular circumstance connected with some of the fungus tribe is that of their emitting light. The pale-green light of the mines of Dresden, almost dazzling the eye and adding a strange enchantment to these beautiful places, is often described by travellers, and is produced by the growth of a minute fungus. Backhouse, when at Norfolk Island, saw great numbers of a small fungus growing from decayed wood or straw, and very abundant among the sugar-canies. The brilliance proceeded mostly from the under part of the cup, and its bluish-green colour procured for it the name among the colonists of Blue Light. The *Agaricus*

of the olive is not uncommon in Italy, and shines like the fire-fly amid the darkness of the grove. Gardner, in his 'Travels in the Interior of Brazil,' describes his discovery of one of these singular mushrooms in these regions. "One dark night," says this writer, "about the beginning of December, while passing along the streets of the Villa de Nativade, I observed some boys amusing themselves with some luminous object, which I at first supposed to be a kind of large fire-fly; but on making inquiry I found it to be a beautiful kind of phosphorescent fungus belonging to the genus Agaricus, and was told that it grew abundantly in the neighbourhood, on the decaying leaves of a dwarf palm. Next day I observed a great many specimens, and found them to vary from one to two and a half inches across. The whole plant gives out at night a bright phosphorescent light of a pale-greenish hue, similar to that emitted by the larger fire-flies, or by those curious soft-bodied animals the Pyrosomæ; from this circumstance and from growing on a palm, it is called by the inhabitants Flor do coco: the light given out by a few of these fungi in a dark room was sufficient to read by." Mr. Gardner brought home dried specimens of this plant, which has since been described by the Rev. M. J. Berkeley, as the *Agaricus Gardneri*.

The limits of this paper will only allow of a slight glance of the uses to which various species of fungus may be applied. Some yield a good colour for the dyer, and from one species ink is made. Some are used in stanching blood, others for stupefying bees, and making tinder. The well-known substance called Amadou, so extensively used in Italy, is made of a fungus beaten to pieces in a mortar, then hammered out, and having been dipped in a solution of nitre, finally dried in the sun. In our own country this Amadou is employed for many household purposes, and in Franconia pieces of this substance are stitched together for clothing. The Laplanders burn it in order to render their houses and reindeer secure from the incursions of the gad-flies, which greatly distress the animals. Several medical practitioners in London have used large sheets of Amadou on the couches of bed-ridden invalids, finding it more elastic than the sheet of chamois leather, and less liable, by crumpling, to irritate the skin.

A species called the Scaly Polyporus, is described by Dr. Badham as making a razor strop "very superior to any of those at present patented, and sold with high-sounding epithets far beyond their deserts. To prepare the Polyporus for this purpose, it must be cut from the ash-tree in autumn, when its juices have been dried and its substance has become consolidated; it is then to be flattened out for twenty-four hours in a press, after which it should be carefully rubbed with pumice, sliced longitudinally, and every slip that is free from the erosions of insects, be then glued upon a wooden stretcher. Cæsalpinus knew all this, and the barbers in his time knew it too; and it is not a little remarkable that so useful an invention should in an age of puffing advertisement and improvement like our own, have been entirely lost sight of." It has also been highly recommended as a cleansing preparation for the hair.

Enough will have been said to convince the readers that the Fungus tribe abounds with objects of interest and beauty. A few of them have also sweet odours, but on the other hand there are many whose scent is so disgusting as to become unbearable within doors. There are mushroom plants which have the perfume of cinnamon, of apricots, of fresh meal, of tarragon, red mullet, tallow or hawthorn blossom. They are in flavour sweet or sour, or pungent, rank, acrid, bitter or flavoured like the nut. So numerous is the tribe that not less than five thousand species are known,

and each year is adding some new plant to the list. Of British species only, the number is so great, that when merely catalogued and described, they are sufficient to fill an octavo volume of nearly four hundred closely printed pages.

## NINEVEH.—THE COURT.



A KING WORSHIPPING.

THE government of the Assyrian empire, like that which has prevailed in all ages in heathen Oriental countries, was an absolute despotism. The monarch, in the East, exercises the most uncontrolled authority over the property, the rank, and the life of every individual in his dominions, from the highest to the lowest. His will is absolute law. The despotic decrees of Nebuchadnezzar, of Darius, and of Ahasuerus, show how entirely the lives of their subjects were in the hands of these autocrats ; “ whom they would they slew, and whom they would they kept alive ; whom they would they set up, and whom they would they put down.”\* (Dan. v. 19.) And we cannot doubt that the sway of the Assyrian monarchs was as irresponsible as that of their Babylonian and Persian successors. For though but little information concerning them has come down to us from extraneous sources, that little exhibits the Assyrian kings as haughty despots, consulting their own pleasure, and acknowledging no superior among men. The insulting message of Sennacherib to Hezekiah and his people, when he threatened Jerusalem, is an example of their unparalleled arrogance.

According to the testimony of a Jewish writer (Tobit i. 18), this monarch exercised his authority in a tyrannical manner, “ slaying many in his wrath,” when he returned baffled to Nineveh.

The inscriptions read by Col. Rawlinson, commemorating the acts of the Assyrian kings, display, though in a less offensive style, the same egotism as the vaunts of Sennacherib ; the aggrandisement of self pervades them all, everything is made subject to the will of the monarch, and all contributes to his glory ; just as in the self-complacent boast of Nebuchadnezzar, no place could be found for any one but himself.

\* This perfect absolutism was not inconsistent with the existence of a council of “ wise men, who knew law and judgment” (Esth. i. 13—22), whose advice the monarch was accustomed to seek, and often to follow. It would even seem that, on some occasions, such a council drew up statutes (Dan. vi. 7—9), to which they asked and obtained the king’s sanction and signature. It is observable that the proclamation of a public fast in Nineveh, on the preaching of Jonah, was “ by the decree of the king and his nobles.” (Jon. iii. 7.)

"The king spake, and said, Is not this great Babylon, that I have built for the house of the kingdom by the might of my power, and for the honour of my majesty?" (Dan. iv. 30.)

In the sculptured monuments everything is in accordance with this idea. The royal person, his pomp and magnificence, his religious ceremonies, his state levees, his wars, sieges, and triumphal returns, his prowess and success in hunting the savage beasts of the forest, the tribute poured at his feet by distant nations,—form the continual subjects of pictorial representation; and amidst all, he is the sun around which everything revolves, the divinity for whose pleasure everything is accomplished.

This arrogation of supreme power did not preclude the recognition of the gods, nor humble homage to them. For though he claimed to be himself, as it were, a divinity, it was only in this lower world; the whole of which, including himself, was subordinate to the supposed divinities that governed the celestial domain. He claimed to represent, or reflect, the great heavenly deity; but the implicit homage and obedience which he exacted on earth, he professed to pay to his liege lord above. Hence, in the historical inscriptions, we find combined in the same person the characters of "powerful and supreme ruler," and "humble worshipper of Assarac and Beltis;" and he who receives homage from the nations around, and bestows all the earth upon the people of his own kingdom, invokes the protection of the gods upon the empire of Assyria. And that mighty conqueror, Sennacherib, who in his arrogance claims superiority not only over the nations, but over the gods whom *they* worshipped, is presently seen in the attitude of an humble worshipper "in the house of Nisroch [or Assarac?] his god."

Thus, too, as we have already intimated we see in the sculptures the same monarch at one time mowing down his enemies, or receiving the deferent homage of his courtiers; at another kneeling beside the sacred tree, and with uplifted hand offering up his petitions to the idolatrous symbol above, that represented in his judgment the God of heaven.

It does not appear that the Assyrian king exercised proper priestly functions. Priests attended him when worshipping, and ministered with the sacred symbols, the basket, the pine-cone, or the branch of fruit or flowers; or bore in their arms the animals devoted to the idol; but these implements and accessories of priestly service are never seen in the royal hands, nor is he ever depicted as adorned with what we suppose to be the insignia of the sacerdotal office, the eagle-wings, the horned-cap, or the vulture's head.

Yet the priests were evidently subordinate to the monarch; even in the act of worship they stood behind him, and presented their symbols towards the idol over his head or over his shoulder. And when he sat enthroned in royal state, priests formed part of the courtly throng that stood around, bearing indeed still the insignia of their office, and holding aloft their symbols with an air of authority that contrasted with the folded hands and humble attitude of the eunuchs and other officers of the household, yet mingling with them, alike ministering to the pomp of their royal master.

So, in the historical inscriptions, the monarch speaks of the public worship as entirely under his own direction, and of the priests to whom it was committed as being appointed by himself. "My servants erected altars [or tablets] in that land to my gods;" "I raised altars to the great gods;" "I erected altars and founded temples to the great gods" "I dedicated a temple to the god Rimmon;" "I perform the rites which belong to the

worship of Assarac, the supreme god ;” “ I established the national worship throughout the land, making a great sacrifice in the capital city, in the temple, which had been there raised to the gods ;” “ I appointed priests to reside in that land to pay adoration to Assarac, the great and powerful god, and to preside over the national worship ;” “ I set up altars to the supreme gods, and left priests in the land to superintend the worship ;”—all these phrases prove how entirely the monarch was the head of the Assyrian worship, while yet his office did not interfere with that of the proper priesthood.

In the court of Persia, which probably had at first very much in common with those of Babylonia and Assyria, the person of the sovereign is and always has been held in almost religious veneration. Real or affected awe sits on the countenances, and is apparent in the motionless attitudes of those who surround him ; and even his command to approach his person is obeyed with manifest dread and reluctance. “ I entreat your majesty not to order me to advance nearer the presence ; I am overpowered ” (literally, I burn, *mi-souzum*), was the reply of a very young courtier, in fact a boy, when first introduced to the present monarch of Persia, and desired to advance towards him. His majesty was delighted.†

We know, both from sacred and profane history, that the most solemn precautions were adopted, to maintain in the popular mind a due sense of “ that divinity that doth hedge a king ;” his presence being of rare and difficult access, not only to guard against treacherous assaults and assassination, but in order that the people, accustomed to see their sovereign only on rare occasions, and never except invested with state and splendour, —might be led to regard him as a being of a superior order, not subject to the common wants and infirmities of humanity, and might therefore be more willing to submit to the exercise of despotic authority. The ancient Persian monarchs made it a capital crime for any one to enter into their presence unbidden, and Herodotus has recorded the fate of Istaphernes, a prince of the court of Darius, who, disregarding the prohibition, was put to death.‡ So stringent was this regulation, that not even the members of the royal family, not even the favourite wife, were excepted. Queen Esther well knew that “ she put her life in her hand,” when, on behalf of her people, she ventured to appear uncalled before King Ahasuerus.

Some of the Bahdinan princes (the noblest and most sacred of the Koord families) are in the habit of covering their heads with a veil whenever they ride out, that no profane eye may look upon their countenance.§ This was the practice also, according to Benjamin of Tudela, with the caliphs of Bagdad.

It is probable that etiquette among the Assyrians did not quite proceed to such lengths as this. For Herodotus attributes the severity of these regulations to Deioces the Median, who successfully revolted from the Assyrian dominion about a century before the overthrow of the empire. “ He, for the first time, established the following rules : that no man should be admitted to the king’s presence, but every one should consult him by means of messengers, and that none should be permitted to see him ; and moreover that it should be accounted indecency for any to laugh or spit before him.” ||

But that some reserve of this kind was practised by the kings of Assyria at a much earlier period, a curious evidence has been brought to light. Since the publication of Mr. Layard’s first works, he has made fresh and

\* Rawlinson’s Commentary, *passim*.

† Fraser’s Persia, p. 395.

‡ Herod. iii. 118.

§ Rich’s Koordistan, i. 155.

|| Herod. i. 99.

extensive excavations in parts of the mounds not before explored ; and one result is said to have been the finding of the throne on which the monarch sat in his splendid palace. It is composed of metal and of ivory,—the metal being richly wrought and the ivory beautifully carved. The throne seems to have been *separated from the state apartments* by means of *a large curtain*,—the rings by which it was drawn and undrawn having been preserved. No human remains have come to light, and everything indicates the destruction of the palace by fire. It is said that the throne has been partially fused by the heat.

The awe in which the person of the sovereign is and always has been held in Oriental courts is, doubtless, by a natural course of action and reaction, partly the cause and partly the result of the extraordinary majesty of countenance, which commonly marks an eastern monarch. The consciousness of real uncontrolled power must tend to produce a calm self-relying dignity, and this cannot fail to produce its effect on the beholders. It is not mere beauty of feature or grandeur of form, though these are elements in the result ; and the aristocracy of the East display the very noblest examples of the human animal. The description which Sir Robert Ker Porter gives of the Persian king at the festival of Nurooz will exemplify our meaning :—

" He entered the saloon from the left, and advanced to the front of it, with an air and step which belonged entirely to a sovereign. I never before had beheld anything like such perfect majesty ; and he seated himself on his throne with the same indescribable, unaffected dignity. Had there been any assumption in his manner I could not have been so impressed. I should then have seen a man, though a king, theatrically acting his state : here I beheld a great sovereign, feeling himself as such, and *he looked the majesty he felt.*"

Every one who has looked at the sculptures which represent the Assyrian monarch sitting in royal state, or standing in the midst of his courtiers, themselves " altogether kings," " all of them princes to look to," must have been struck with the majesty of his countenance, and the unostentatious dignity of his action. This is most conspicuous in the kings of the earlier period, for in some of the portraits of Shalmaneser, while there is still the same grace and dignity, the countenance is less majestic.

We may trace the same facts in some of the allusions of Scripture :—

" Then said he unto Zebah and Zalmunna, what manner of men were they whom ye slew at Tabor ? And they answered, as thou art, so were they ; each one *resembled the children of a king.*" (Judg. viii. 18.)

The " golden sceptre" mentioned in the Book of Esther, receives an interesting illustration from the sculptured monuments, both of Persia and Assyria. In the bas-reliefs of Persepolis, copied by Sir Robert Ker Porter, we see King Darius enthroned in the midst of his court, and walking abroad in equal state ; in either case he carries in his right hand a slender rod or wand, about equal in length to his own height, ornamented with a small knob at the summit. In the Assyrian alabasters, as well those found at Nimroud as those from Khorsabad, the " great king" is furnished with the same appendage of royalty, a slender rod, but destitute of any knob or ornament. On the Khorsabad reliefs the rod is painted red, *doubtless to represent gold* ; proving that the " golden sceptre" was a simple wand of that precious metal, commonly held in the right hand, with one end resting on the ground, and that whether the king was sitting or walking ; for in the Assyrian sculptures we see it in the hand of the king when sitting

on his throne, and when conversing familiarly race to face with his chief minister.

The golden sceptre has received little alteration or modification, since that which it underwent in the added ornament at the summit, on its transmission from the Assyrian to the Persian court. Sir William Ouseley found it nearly the same as of old, not however carried by the monarch himself, but borne by special officers. "Some men," he observes, "whose office I neglected to inquire, held each in his hand a sceptre, or slender wand, nearly four feet long, and apparently of gold enamelled green, with a figure of a bird at top, as large as a real sparrow, and made of emeralds, rubies, and other jewels."

WILD FLOWERS.



FORGET-ME-NOT. (*Myosotis palustris*.)

THE various traditions which gave rise to the popular name of this bright flower throughout Europe, are told by poets and historians. Agnes Strickland says that Henry of Lancaster, when in exile, gave it to the Duchess of Bretagne, and by placing it on his collar of S. S. with the initial letter of his *mot* or watchword, "Souveigne vous de moy," rendered it the symbol of remembrance. Bishop Mant gives us the traditional creed more generally received, though certainly less entitled to belief. A lady and a knight were sitting by the river side, when the former wished for the bright blue blossoms to braid among her hair. The knight dashed into the water to gratify her wishes, and gathered the flowers, but was overborne by the strength of the current.

"Then the blossoms blue to the bank he threw,  
 Ere he sank in the eddying tide ;  
 And 'Lady, I'm gone, thine own knight true,  
 Forget me not,' he cried.

"The farewell pledge the lady caught,  
 And hence, as legends say,  
 The flower is a sign to awaken thought  
 Of friends who are far away."

Thus say the poets, but the philosophers believe them not ; and so one of our great botanists suggests that after all the flower owes its name to its beautiful blue petals and yellow eye, which once looked upon are not likely to be forgotten.

This plant is called also Great Scorpion grass, and Mouse ear, and is, during the summer months, very common in our humid meadows, bogs, banks of rivers, rivulets, and ditches. It grows in similar places throughout Europe, and also in many parts of Asia and North America. A variety has been found with white flowers.

There are eight native species of the genus, and all have blue blossoms. The little brilliant blue flower found in fields from June to August, and often called Forget-me-not, is the Field Scorpion grass (*Myosotis arvensis*). It is very abundant on cultivated lands, on hedge banks, and in groves, &c. The name of the genus is derived from two Greek words, signifying mouse and ear, from the shape of the leaves.

#### AVALANCHES.



In all countries where the mountains rise to a great height, and are covered with snow, the fall of Avalanches occurs more or less frequently. These terrible and destructive phenomena consist of immense masses of ice or snow, which accumulate on the upper parts of mountains to such an

extent, that the slopes on which they rest can no longer support them ; they then slide off by their own weight into the valleys beneath with amazing velocity, and with such resistless force, that everything is swept away before them ; even whole forests and villages when such occur in their course.

There are several kinds of Avalanches to which distinct names are given by the inhabitants of the Alps. Those most commonly seen by tourists are *Ice Avalanches*, or portions of glaciers giving way under the influence of the summer's sun. When seen from a distance, these masses of ice, breaking into smaller fragments against the rocks as they fall, resemble rushing cataracts, and are accompanied by a similar thundering noise. Such Avalanches mostly fall in uninhabited districts, and are seldom fatal in their effects ; they occur only during summer, but are very frequent at that season. They are most numerous a little after noon, when the sun exercises the greatest influence in loosening the masses and causing them to break off.

The appearance of the Avalanches descending the sides of the Jungfrau, one of the Bernese Alps, is well described in the following extract from Murray's "Handbook for Travellers in Switzerland :"—

"The attention is first arrested by a distant roar, not unlike thunder, and in half a minute a gush of white powder, resembling a small cataract, is perceived issuing out of one of the upper grooves or gullies ; it then sinks into a lower fissure and is lost only to reappear at a lower stage, some hundred feet below ; soon after another roar, and a fresh gust from a lower gully, till the mass of ice, reaching the lowest step, is precipitated into the gulf below. By watching attentively the sloping white side of the Jungfrau, the separation of the fragments of ice from the mass of the glacier which produces this thunder, may be seen at the moment when disengaged, and before the sound reaches the ear. Sometimes it merely slides down over the surface, at others it turns over in a cake ; but in an instant after it disappears it is shattered to atoms, and in passing through the different gullies is ground to powder so fine, that as it issues from the lowest, it looks like a handful of meal ; and particles, reduced by friction to the consistence of dust, rise in a cloud of vapour. Independent of the sound, which is an awful interruption of the silence usually prevailing on the high Alps, there is nothing grand or striking in these falling masses ; and indeed it is difficult, at first, to believe that these echoing thunders rise from so slight a cause in appearance. The spectator must bear in mind that at each discharge whole tons of ice are hurled down the mountain, and that the apparently insignificant white dust is made up of blocks capable of sweeping away whole forests, did any occur in its course, and of overwhelming houses and villages. During the early part of summer three or four such discharges may be seen in an hour ; in cold weather they are less numerous ; in the autumn scarcely any occur."

Earlier in the year, Avalanches of a more dangerous character fall with considerable regularity, sliding down habitual channels which become perfectly smooth from the friction which they thus undergo from time to time. These regular Avalanches are eagerly expected by the peasants as the sure tokens of the commencement of spring. But circumstances, which cannot be foreseen, will sometimes divert these Avalanches from their usual course, or cause them to fall unexpectedly. They consist of masses of compact snow and ice, which are yet clammy and adhesive, by which the traveller may be crushed or suffocated in a moment. The masses are

sometimes of enormous extent, covering meadows and forests with a thick layer of snow, which the heat of two or three summers is scarcely sufficient to melt. The instantaneous fall of these *Snowy Avalanches* may overwhelm a village in the night, without the inhabitants being aware of the calamity which has befallen them. Such was the case in 1749, when the village of Bueras, in the Canton of the Grisons, was buried, and at the same time removed from its site. The inhabitants, on awaking in the morning, could not imagine why daylight did not appear. One hundred of these unfortunate villagers were dug out of the snow, sixty of whom were still alive, the hollows in the snow having contained air enough to support life in the more robust among them.

"To guard as much as possible against such accidents, very large and massive dykes of masonry, like the projecting bastions of a fortification, are in some situations built against the hill side, behind churches, houses, and other buildings, with an angle pointing upwards, in order to break and turn aside the snow. In some valleys great care is bestowed on the preservation of the forests clothing their sides, as the best protection of the district below them from such calamities. These may truly be regarded as sacred groves; and no one is allowed to cut down timber within them, under pain of a legal penalty. Yet they not unfrequently show the inefficiency even of such protection against so fearful an engine of destruction. Whole forests are at times cut down and laid prostrate by the Avalanche. The tallest stems, fit to make masts for a first-rate man-of-war, are snapped asunder like a bit of wax, and the barkless and branchless stumps and relics of the forest remain for years like a stubble-field to tell of what has happened."

Some years ago, the Austrian Government, desirous of connecting the province of Sondrio with the Tyrol by a mountain-road, which was not to pass over any portion of Switzerland, but to lie entirely within their own dominions, caused a road to be made over Monte Stelvio, through a region frequently exposed to Snowy Avalanches. This road is a very interesting one, not only from its being the highest carriage road in the world, but on account of the skill with which it is constructed, and the sublime scenery through which it passes. It is described as a singular and astonishing example of human labour. For a considerable distance half its width is covered in by strong wooden galleries, with roofs and supports sufficiently massive to resist the pressure of the descending Avalanches. At one part of the road the magnificent Ortler Spitz—the third of the European mountains in height, being fourteen thousand four hundred feet above the sea-level,—opens suddenly to the view of the traveller "with a vast and appalling effect, as it is seen from its extreme summit to its base, robed in everlasting snows, which descend on its sides in enormous glaciers, and stream into the valley below the road. Immense masses of rocks, in themselves mountains, throw out their black and scathed forms in striking contrast with the brightness of the glaciers which they separate." The Tyrolese side of the pass is much steeper than the Italian, and the road is formed into a series of zig-zags in order to preserve a gradual descent. By this means the fall never exceeds ten inches in a hundred. A post-house, built among these turnings, was destroyed in 1826 by an avalanche. It was built with the utmost solidity, in order to resist the weight of the falling snow; but the event proved how feeble is the arm of man to contend with "the avalanche,—the thunderbolt of snow,"—for the house was smashed to atoms, and the postmaster found dead with a rock upon

his breast, which ten men could not move. The two ostlers, who were in the stable at the time, were saved. It is supposed that if the building had been constructed with a sloping roof, so as to assist the descent of the avalanche, instead of opposing its progress, it might have escaped. On the summit of the pass, at a height of nine thousand two hundred and seventy-two feet above the level of the sea, and seven hundred and eighty above the line of perpetual snow, stands a solitary house of refuge, one story high, inhabited by an inspector of the road. It is the highest permanent habitation in Europe. Other houses are established in convenient situations along the road, at some of which the travellers may find rest and refreshment; at others only shelter.

Another kind of avalanche, and the most destructive of all, remains to be noticed. This is the *Drift Avalanche*, which takes place in winter after a very heavy fall of snow. Violent gusts of wind detach large masses of snow from the heights where they have accumulated: these, falling on the lower declivities, force off other masses, so that a volume of loose snow of immense extent is accumulated and cast with astonishing rapidity and force into the valleys beneath, sometimes traversing a distance of at least ten miles. These avalanches are greatly dreaded, not more for their own violence, than for that of a rush of air which accompanies them, and is occasioned by them, and which, "like what is called the wind of a cannon-ball, extends its destructive influence to a considerable distance on each side of the actual line taken by the falling mass. It has all the effect of a blast of gunpowder: sometimes forest-trees, growing near the sides of the channel down which the snow passes, are uprooted and laid prostrate without having been touched by it." This effect may also accompany the other descriptions of avalanche, as in the terrible catastrophe which occurred in the year 1819, in the valley of Visp in Valais, where the village of Randa was destroyed by an ice avalanche. This village was situated near the base of a mountain mass, which rises nearly perpendicularly to a height of more than nine thousand feet, and forms part of the snowy mountain called the *Weisshorn*, or the "White Horn." This is surrounded on all sides by huge glaciers, one of which, before the accident referred to, had advanced to the very edge of the precipice and was overhanging it, when an enormous piece of ice suddenly fell with a terrible crash into the valley below, where it covered with ice, rubbish, and fragments of rock, a space of two thousand four hundred feet in length, and a thousand feet in width, to a depth of more than a hundred and fifty feet. This space was uninhabited, but not far from it was the village which was destroyed by the compression of the air produced by the fall. The force of the gust caused by this compression was so powerful that it raised millstones from the ground, and conveyed them to a spot several yards higher than that from which they had been removed. The houses were scattered like chaff; several ponderous beams were removed into a forest nearly a mile off, and the steeple of the church, which was a massive building of stone, was broken down.

Such is the fearful power of the Avalanche, and such are some of the grand yet terrific spectacles which impress with awe and reverence the mind of the mountain traveller.

## THE SPERM WHALE.



IT is not to any extraordinary development of the brain of this animal, nor even of the skull, that the immense bulk of the head is owing; the jaws indeed are greatly lengthened, but the brain is very small, and seated at the back of the head, the whole anterior part forming a huge cavity, known to whalers as the "case," which is not enclosed by bone, but by a thick, tendinous, elastic skin, and lined with a beautiful, glistening membrane. This cavity is filled with a clear oil, sometimes to the amount of ten barrels, which after death cools into the granulated substance, well known, when purified, as *spermaceti*.

The coat of blubber, contained in the texture of the skin of the body, produces an oil, which is much valued, for its clearness and other qualities, and is known as *sperm-oil*. These two products form the principal object of the Sperm-whale fishery; a pursuit which, from the remote distance at which it is prosecuted, the protraction of exile which each voyage involves, the romantic character of its incidents, and its hazardous nature, is perhaps unrivalled among pacific occupations.

Mr. Beale, in his very interesting volume on the Sperm-whale, describes a male of the largest size as about eighty-four feet in length, and twelve or fourteen in diameter, at its thickest part. The fins are small, being no more than six feet long by three broad. They appear to be used rather in balancing the body and supporting the young, than in giving progress in motion, which is the proper office of the tail. The skin is smooth, of a very dark grey hue, nearly black on the upper parts, but silvery beneath. Some, however, are pied. Old males usually have a large spot of pale grey on the front of the head, when they are said to be "grey-headed." The eye is situated just above the angle of the mouth; and over this at the junction of the head with the body, there is an elevation called the "bunch of the neck;" from hence the outline of the back is nearly straight, to within one-third of its length from the tail, where there is a larger prominence, called the "hump;" it now rapidly tapers away to the tail, and this slender part is technically distinguished as the "small,"

while the huge tail spreading widely on each side bears the name of "flukes."

The motions of this enormous animal are exceedingly curious: when moving perfectly at leisure, he swims slowly along, just beneath the surface, effecting his progress by gently striking the fluid with his tail from side to side obliquely. The *bunch* and *hump* may be seen above the water; and by the disturbance which they cause in cutting the surface, some foam is produced, by which an experienced whaler can judge, even at some miles' distance, how fast the animal is going. When alarmed, however, or from any cause inclined to increase his velocity, he uses a very different mode of progression. The broad tail now strikes the water upward and downward alternately with great force; at every blow downward the forepart sinks several yards into the water, while by the force of the upward blow, the head is thrust entirely out of the water. A whale can swim in this way, the head alternately appearing and disappearing, which the seamen call "going head out," at the rate of twelve miles an hour. In the facility with which the enormous head is projected, we see the wisdom of its immense size; bulky as it is, the fluid oil with which it is filled, rarefied by vital heat, renders it the most buoyant part by far of the animal, being of itself considerably lighter than the surrounding medium: hence, little effort is required to project the breathing orifice, on the summit of the muzzle, into the air; while, again, the swiftness of the animal is greatly increased by the removal of so broad and bulky an extremity from the dense fluid through which it is swimming. "O Lord! how manifold are thy works! *in wisdom* hast thou made them all."\*

The Sperm-whale is found in all seas, but is most abundant in the Pacific, at some particular points of which herds are said to congregate periodically. The pursuit of this enormous animal forms an important branch of commercial enterprise, in which the bold seamen of the United States have the greatest share. The voyage commonly occupies three or four years, and is one of unexampled hazard and privation. Ships of three or four hundred tons are selected for this pursuit, strongly built, and manned with a crew of about thirty hands. A watch is stationed aloft immediately on leaving the port, although the prey is rarely met with in the North Atlantic. This watch is never intermitted during the whole voyage, or at least until a full cargo is obtained. The watch, on the sight of a Sperm-whale, immediately communicates the welcome information by calling aloud in a peculiar tone, "There she spouts!" a cry which never fails to produce a general rush on deck of all hands. "Whereaway?" eagerly demands the master; the position of the distant object is pointed out, and at each fresh "spouting," the watch, accompanied by every individual on board who has caught sight of the Whale, vociferates, "There again!" The spoutings being all performed, the elevation of the broad tail into the air, preparatory to descent, is announced in the same manner by "There goes flukes!"

The object of these announcements is explained by the remarkable regularity with which every motion connected with the respiration of this animal is performed. The length of time it remains at the surface, the number of exhalations, or *spoutings*, performed on each occasion, the length of the interval between the spouts, the time it remains submerged before again rising to breathe, are all, when the animal is undisturbed, as regular in succession and duration, as can be imagined. This circumstance is of

\* Psalm civ. 24.

the greatest value to the whaler; for when the periods of any particular Whale have been observed, it may be calculated even to a minute when it will reappear, and how long it will continue at the surface.

At the first announcement, the boats, which are constantly kept in readiness, are lowered, and manned with joyful alacrity. Every nerve is strained to reach the animal before his sputtings are out, which, in a large bull-whale, may be about ten minutes. If he is too far off, however, they strive to note the direction in which he dives, stationing themselves near the spot where they expect he will emerge. On his reappearance, the boats are rowed up as silently as possible, and the harpooner of the foremost darts his weapon with all his strength. At the same moment, he cries "Stern all!" and the oarsmen give the boat stern-way with precipitation. The Whale in his agony dives perpendicularly, drawing the line of the harpoon swiftly through its grove; the other boats are ready to bend on their lines, each of which is two hundred fathoms long; for a Whale will sometimes carry down four lines, descending to the depth of nearly a mile. But again he approaches the surface; "the gurgling and bubbling water, which rises before, proclaims that he is near; his nose starts from the sea; the rushing spout is projected high and suddenly from his agitation." The other boats now infix their harpoons, and sharp steel lances are thrust deeply into the body.

The most dangerous part of the enterprise now ensues; the Whale is in his last agony: he dashes hither and thither, snaps convulsively with his long lower jaw, rolls over and over, coiling the line round his body, or leaps completely out of the water. The boats are often upset, sometimes broken into fragments, and the men wounded or drowned. The crimson blood, spouted from the blow-hole, falls in showers around; the poor animal whirls rapidly round in unconsciousness, in a portion of a circle, rolls over on its side, and is still in death.

The body is then towed to the ship; the head is cut off and secured at the stern; a hole is cut into the skin of the fore part of the body, into which a large hook is inserted. A strong pulley being attached to this hook, the blubber is thereby hoisted up, as it is gradually cut by sharp spades in a spiral strip, going round and round the body. As this band is pulled off, the body revolves, until the stripping reaches the *small*, when it will turn no more. In the meantime, the head having been placed in an upright position, an opening is made in the front of the *case*, and the spermaceti dipped out with a bucket at the end of a pole. The *junk*, a thick mass of tough, tendinous substance, situated beneath the *case*, is then extracted and cut into pieces, as well as the blubber; both of these substances being rendered into oil by means of heat. The products are then stowed away in barrels in the hold.

The preparation of the crude spermaceti, when brought home, is thus performed:—"The mass is put into hair or woollen bags, and pressed between plates of iron in a screw-press, until it becomes hard and brittle; it is then broken into small pieces, and thrown into boiling water, where it melts, and the impurities are separated from it. After being cooled, and taken from the first water, it is put into a boiler of clean water, and a weak solution of potash is gradually added. This is thrice repeated, after which the whole is poured into coolers when the spermaceti concretes into a white semi-crystallized mass, and on being cut into small pieces exhibits a beautiful flaky appearance, so well known as belonging to the spermaceti of commerce."

## INSTINCT.

THE tail, or hinder part of the hermit-crab, has no crust or shell upon it, as the body and the claws have ; and therefore this animal has to seek a suitable dwelling place, some empty univalve shell, into which it insinuates its tail, and from which its head and arms project. With this power of selecting a house, it removes when it has outgrown the shell in which it has dwelt, and is seen trying the empty shells upon the shore, and contending with others of its own species.

Surveying such instances, we cannot resist the conviction of the fine adaptation of the sensibilities and instincts of animals to their forms and substances.

## ANIMAL ADAPTATION.

THE larvae of insects have no exterior members for walking or flying ; but to enable them to creep, they must have points of resistance, or their muscles would be useless. Their skins suffice, and they are hardened by a deposit within them, for this purpose.. But if this skin were not further provided, it would be rigid and unyielding, and be no substitute for bone. These hardened integuments are, therefore, divided into rings ; to these the muscles are attached ; and as the cellular membrane between the rings is pliant, the animals can creep and turn in every direction.

As goodly a volume has been written on the muscles of a caterpillar, as has ever been dedicated to those of the human frame. A very minute anatomical description has been made of the caterpillar which feeds upon the willow ; and we here see that the annular construction of the hard integument determines the plan of the whole anatomy, the arrangement of the muscles, and the distribution of the nerves. Each ring has its three sets of muscles ; direct and oblique, traversing and interweaving, but yet distinct and symmetrical ; and all as capable of being minutely described as those of the human body. Lyonnet, in the work referred to, reckons four thousand and sixty-one muscles in this caterpillar. We allow ourselves to be misled in supposing that animals, either of minute size or low in the scale of arrangement, exhibit any neglect or imperfection. Even if they were more simple in structure, the admiration should be greater, since they have all the functions in full operation which are necessary to life.—SIR C. BELL.

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

## HISTORICAL NOTICE OF CALICO PRINTING.

THE ancients seem to have been well acquainted with the art of producing a coloured pattern on cloth. Homer, who wrote about nine hundred years before the Christian era, notices the variegated linen cloths of Sidon as magnificent productions. In India the art has been practised for ages, and it derives its English name of *Calico Printing* from *Calicut*, a town in the province of Malabar, where it was formerly carried on extensively. Herodotus, who wrote more than four hundred years before the Christian

era, says, that “the inhabitants of Caucasus adorned their garments with figures of animals, by means of an infusion of the leaves of a tree, and the colours thus obtained were said to be very durable.” Pliny describes the art of calico printing, as practised by the ancient Egyptians. He says :—

“ An extraordinary method of staining cloths is practised in Egypt. They there take white cloths, and apply to them, not colours, but certain drugs which have the power of absorbing or drinking in colour ; and in the cloth, so operated on, there is not the

smallest appearance of any dye, or tincture. These cloths are then put into a cauldron of some colouring matter, scalding hot, and after having remained a time are withdrawn, all stained and painted in various colours. This is indeed a wonderful process, seeing that there is, in the said cauldron, only one kind of colouring material. Yet, from it, the cloth acquires this and that colour, and the boiling liquor itself also changes, according to the quality and nature of the dye-absorbing drugs which were at first laid on the white cloth. And these stains or colours, moreover, are so firmly fixed as to be incapable of being removed by washing. If the scalding liquor were comprised of various tinctures and colours, it would doubtless have compounded them all in one on the cloth; but here one liquor gives a variety of colours according to the drugs previously applied. The colours of the cloths thus prepared are always more firm and durable than if the cloths were not dipped into the boiling cauldron." Mr. Parnell remarks on the above passage, that in as few words the principle of the common operations of calico printing could hardly be more accurately described.

The large cotton chintz counterpanes, called *Pullampoors*, which have been made in the East Indies from a very early period, are also prepared by the application of dye-absorbing drugs; certain parts of the cloth being guarded from the action of the dye by a coating of wax. The primitive methods of India are, however, being superseded by the printing machinery of Great Britain.

When Cortez conquered Mexico, he found the inhabitants had garments with black, red, yellow, green, and blue figures. The North American Indians have also long known how to apply patterns in different colours to cloth.

During several centuries the art of calico printing was practised in Asia Minor and the Levant, but it was scarcely known in Europe till the close of the seventeenth or the beginning of the eighteenth century, when Augsburg became celebrated for its printed cottons and linens. From that city the manufactures of Alsace and Switzerland, during a long period,

obtained their colour mixers, dyers, &c. Calico printing was first introduced into England about the year 1676, by a Frenchman, who established works on the banks of the Thames near Richmond. Soon afterwards more extensive works were formed at Bromley Hall in Essex. About the year 1700, the infant art received an unexpected stimulus. In consequence of the complaints made by the silk and woollen weavers, an Act of Parliament was passed, prohibiting the importation of chintzes from India; whereupon several print-works were established in Surrey, to supply the London shops with these goods, which was done by printing the white Indian calicoes, the import of which was still allowed under a duty. In 1712, a duty of threepence per square yard was imposed on this printed calico, and in 1714 the duty was raised to sixpence; but, as the importation of white calico was still considerable, the complaints of the silk and woollen weavers became louder, and they actually succeeded in inducing the legislature, in 1720, to pass an Act prohibiting the wearing of all printed calico whatever, under a penalty of 5*l.* for each offence on the wearer, and of 20*l.* on the seller of a piece of calico.\* The operations of the printer were consequently confined to the printing of linen until the year 1730, when the law was so far modified that calico was allowed to be printed, provided the warp was of linen yarn and the weft only of cotton; and even then it was subject to a duty of sixpence per square yard. With such obstructions the progress of the art was of course slow. In the middle of the last century only fifty thousand pieces of the mixed cloth were printed in the whole of Great Britain, whereas at the present time it is not unusual for a single manufactory to turn out, in one year, between three and four hundred thousand pieces.

About the year 1774, when the inventions made or perfected by Arkwright had introduced a new era into the history of the cotton manufacture

\* ANDERSON's *History of Commerce*. By an Act of the same year (7 George I.), intended to encourage the silk manufacture, the wearing of buttons or button-holes made of cloth, or other stuff, was absolutely prohibited.

a law was passed, allowing printed goods made entirely of cotton to be used ; subject, however, to a duty of three-pence per square yard, which was raised, in 1806, to threepence half-penny. During many years attempts were made to get this duty repealed ; for, although the nominal revenue produced by it was very large, yet after deducting drawbacks on exports, and the expenses of collection, a very small sum remained. Thus, in the year 1830, a revenue of 2,280,000*l.* was levied upon 8,596,000 pieces, of which, however, about three-fourths were exported with a drawback of 1,579,000*l.* Deducting the expenses of collection, the sum of 350,000*l.* only found its way into the Exchequer. In the year 1831, the duty was wholly repealed, to the great advantage both of manufacturer and consumer. The art itself has been wonderfully improved by many of the most refined applications of chemical and mechanical science. Printed goods, which fifty years ago were sold for two shillings and threepence the yard, may now be bought for eightpence ; indeed, the materials for a very pretty gown may be purchased for two shillings. This cheapness of production has so much increased the demand for printed cotton goods, that it was calculated a few years ago that not less than 230,000 persons were employed in and dependent upon the print trade for subsistence, receiving in wages the annual sum of 2,400,000*l.*

#### VARIOUS MODES OF CALICO PRINTING.

THE union of mechanical and chemical science is most strikingly illustrated in the details of calico printing ; the object of which is to apply one or more colours to particular parts of cloth, so as to represent a pattern of leaves, flowers, &c. The beauty of a *print* depends on the brilliancy and contrast of the colours, as well as on the elegance of the pattern. The process is equally applicable to linen, silk, worsted, and mixed cloths, although it is usually referred to cotton cloth, or calico.

There are various methods of printing, which will be described in the order of their simplicity, in doing which the writer has to acknowledge

the kindness of Mr. Joseph Lees, jun., of Manchester (from whose prints works much of the following information, as well as the sketches for the illustrations, were obtained) ; and also Mr. Parnell's valuable work, "Applied Chemistry in Manufactures," &c..

#### I.—BLOCK PRINTING BY HAND.

The simplest and earliest method of imprinting figures upon calico is by means of a wooden block, upon the face of which the design is cut in relief, as in an ordinary wood-cut.



CALICO-PRINTING BLOCK.

The block is of sycamore, holly, or pear-tree wood, or more commonly of deal, faced with

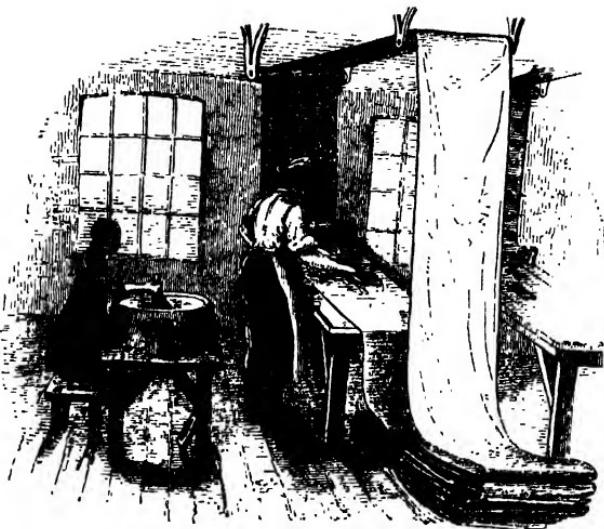
one of these woods

The block varies in size from nine to twelve inches long, and from four to seven inches broad, and it is furnished on the back with a strong handle of box-wood. When the design is complicated, and a very distinct impression is required, the figure is sometimes formed by the insertion of narrow slips of flattened copper wire, the interstices being filled with felt.

The printing block, which is worked by hand, is charged with colour by pressing it gently upon a piece of superfine woollen cloth, called the *sieve*, stretched tightly over a wooden drum, which floats in a tub full of size or thick varnish, to give it elasticity, so that every part of the raised device may acquire a sufficient coating of colour. The sieve is kept uniformly covered with the colouring matter by a boy or girl, called the *tearer*, who takes up, with a brush, a small quantity of the colour contained in a small pot, and distributes it uniformly over the surface ; for, if this were not done, the block would take up the colour unequally.

The calico is prepared for printing by *singeing*, *bleaching*, and *calendering*. Several pieces are then stitched end to end, and lapped round a roller, or arranged in folds, as shown in the cut. The printing shop is a long well-lighted apartment, the air of which is kept warm, for the purpose of drying the cloth as it is printed : for which purpose it is passed over hanging rollers,

\* Probably a corruption from the French *tirer*.



BLOCK PRINTING.

so as to expose a large surface to the air. The printing table, which is about six feet long, is made of some well-seasoned hard wood, such as mahogany, or of marble, or flag-stone: the object being to present a perfectly flat, hard surface. This table is covered with a blanket, upon which the calico is extended, and the block, being charged with colour, is applied to its surface, a blow being given with a wooden mallet to transfer the impression fully to the cloth. It is necessary, of course, to join the different parts of the design with precision; and, in doing so, the printer is guided by small pins at the corners of the block. Thus, by repeated applications of the block to the woollen cloth and to the calico alternately, the whole length of calico is printed.

By this method, a single block prints only a single colour; so that if the design contain three or more colours, three or more blocks will be required, all of equal size, the raised parts in each corresponding with the depressed parts in all the others: in order, therefore, to print a piece of cloth twenty-eight yards long and thirty inches broad, with three blocks, each measuring nine inches by five, no less than 672 applications of each, or 2,016 applications of the three

blocks, are necessary. Thus it will be seen that printing by hand is a tedious operation, requiring more diligence than skill.

When the design, however, consists of straight parallel stripes of different colours, they may be applied by one block at a single impression. For this purpose the colours are contained in as many small tin troughs as there are colours to be printed. These troughs are arranged in a line, and a small portion of each colour is transferred from them to the woollen cloth by a kind of wire brush. The colour is distributed evenly in stripes over the surface of the sieve by a wooden roller covered with woollen cloth. For the *rainbow style*, as a peculiar pattern is called, the colours are blended into one another at their edges by a brush or rubber.

An important improvement has been made in the construction of hand blocks, by the application of a stereotype plate as the printing surface. A small mould is produced from a model of the pattern, and the stereotype copies are then made by pouring mixed metal into it. A number of the stereotype plates are then formed into a printing block, by being arranged in a stout piece of wood.

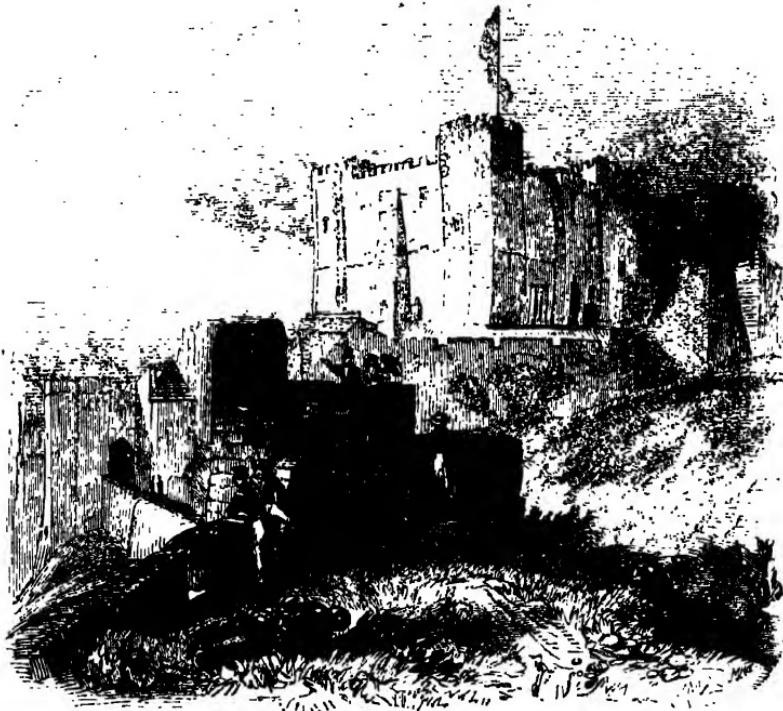
(To be continued.)

THE  
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DOVER CASTLE.



It is impossible to visit Dover, without seeing, either from afar or near, the venerable fortress which stands on one of its heights. Reared on an almost perpendicular precipice, upwards of 320 feet from the sea, that old Castle with the sun shining on its broken towers and massive walls, on its dark green ivy, and richly verdant slopes is, irrespectively of its historic associations, a deeply interesting and highly picturesque object. And when we ascend the steep hill to survey the ruins more closely, Nature and Art

have each their wonders to offer to our admiration. Stretching far away in the distance is the blue broad sea, glittering as it dashes upon the stony beach, and making a low murmur which falls faintly on the ear from below. The North Foreland with its guardian lighthouse; the long line of Ramsgate Pier; the Isle of Thanet; the Church of Reculver; on which the sea has advanced during the course of years, and threatens in coming days to advance still farther, all may, on a clear day, be seen from the Castle hill. Thence, too, we may behold the old town of Sandwich, tracing some dim shadows of the houses which stand among its Time-worn and grass-grown streets; while, on the opposite shore, the light shines on white cliffs, so like those on our own coast, as at once to suggest the thought that they must have been riven asunder from them; while the grassy summits seem to form a greensward which reaches along all the way from Boulogne to Gravelines.

As we enter more immediately the precincts of the Castle and follow the guide into the silence of its deserted towers and among its outer and inner fortifications, memory and imagination are awakened. The past is with us then, and men of bygone ages have left there the records of their character and history. An hour occupied in considering some of the changes which that old Castle has undergone, since it was regarded as the "Key of the Kingdom," is not misspent. "Whatever," says Dr. Johnson, "makes the past, the distant, or the future, predominate over the present, advances us in the stage of thinking beings." With reverent attitude we may wait on the revelations of Time, seeing there the history of man's doings, and of God's providence, and believing, with the poet, that

"The Past holds in its arms the Present and the Future."

Without entering minutely into the details of every tower and gate and massy wall, we may, even by looking up from the beach, or from almost any of the streets of the town, see the large square part of the Castle, called the Keep, with its strong walls and turrets, and long line of wall and towers and gateway. We can, from either of these places, also discern the old Pharos, Watch-tower, or Lighthouse, and the ruins of the church, which, though its date is uncertain, is assuredly one of the oldest in the kingdom: as doubtless that octagonal Pharos, now but a ruin, is one of the most ancient pieces of masonry, if not the very first, which was reared on this island. The Romans built it of a stalactical concretion, instead of stone, mingling among this the well-known Roman-tiles. The walls are very thick, and are now about forty feet in height, but it is impossible to tell how high they once were, ~~as~~ Time had crumbled them, and stained them with the grey lichens, which are mixed with the mosses and wild-flowers, which grew among their crevices. These sturdy walls have resisted, not alone the winds and frosts of long ages, but have even withstood the shock of an earthquake, which in April 1580 extended along the whole line of the cliffs, hurling down vast masses of chalk, and breaking away some portions of the Castle which were built near the edge.

The sea has long since receded from the base of the cliff, though when Julius Cæsar first made his descent upon our island, this cliff was washed by the high tide. The chronicles of the monks tell us that the first part of Dover Castle was built by this monarch, 55 years before the Christian era, but pretty good proof exists that this was not the case. The architecture of this remarkable ruin shows that different portions were constructed at different intervals of time, and the portion which is evidently the most ancient, has been suffered to moulder into ruin. The site would doubtless

be regarded in earliest times as a suitable one on which to build a tower of defence from a foreign enemy, and it is not improbable that the ancient Britons might have had some stronghold on the spot, even before the invasion of the Romans.



THE PHAROS.

The first account on which we can rely of any Roman masonry in this kingdom is, during the lieutenancy of Aulus Plautius, and Ostorius Scapula, the latter of whom left Britain A. D. 53. It was, in all probability, a few years before this date, that the Roman works on the Castle were commenced, the plan of the ground, as well as the nature of the oldest part of the ruin, plainly indicating that the architect was a Roman. This was in all likelihood the time when the Pharos was constructed. The Romans, as we know from their poets and other ancient writers, believed that the portion of the sea which washes our shores, was highly dangerous to the mariners. "Swallowing sands, rough shores and a deceiving tide," were believed to be characteristic of Britain; and Horace describes our channel as—

"The monster-bearing sea which roars  
About the dangerous British shores ;"

while Juvenal speaks of the "hugeness of the British whale" as far exceeding that of the dolphin of his own sea.

As it became requisite for the Romans to cross the sea more frequently, a lighthouse was the more necessary; and they erected both this Pharos

and another on the heights on the opposite side of the haven, the last remains of which were destroyed in constructing the redoubt on its site in 1805. A third, placed on the opposite shore of Boulogne, is said to have been built by Caligula, in commemoration of his act of gathering shells, and returning in triumph to the Imperial City. This building fell with a great crash into the sea in 1644.

The foundation of the Pharos at the Castle, is like those of all the Roman buildings, in a bed of clay. In outward form the structure is an octagon, and the interior is a square, the sides of which are each about 14 feet.

Even more interesting from its associations with the past are the remains of the old church, telling as they do of the time when a purer faith began to supplant the superstitions of paganism. Amid the darkness of an age in which the Holy Scriptures could be read by so few, when as yet their influences had told so little on the minds of the people, there were even then, doubtless, many whose hearts ascended to God in faith and prayer, and who lived devout and pious lives.

If, as we walk amid the ruins of our old castles and abbeys, we see dungeons so dark and unwholesome that we feel as if the hearts of the men who built them were as hard as the stones of their walls, yet again when we look on the structures raised for worship, we feel assured, that here some lived and died in humble faith, and went up hence to the clearer light of heaven.

The thick walls of the old church still remain to tell of its ancient strength, and prove either that the architect was a Roman, or that they were built of the materials of some older structure, left by the Romans on their final removal from our island. The blue sky is over their roofless walls—

“The buttercups are lifting up their heads  
Upon the floor of the confessional,  
Where came the worshipper with counted beads,  
Upon his knees in penitence to fall ;  
Where came the great to listen unto all ;  
And scoff or pray, as good or ill was he :  
Could words come forth from that time-stricken wall,  
Some wondrous tales retold again would be ;  
The maiden’s simple love—thefeat of villainy.”

The church is in the form of a cross, having a quadrangular tower on the east side. Darell, who wrote his account of Dover Castle in the reign of Queen Elizabeth, says that this had been adorned with the arms of Lucius, but that even in his time, they had been effaced by wind and weather. The chronicles of the monks relate that the church was built by Lucius, who, in A.D. 180, was appointed king of the eastern parts of Kent by the Emperor Aurelius. He was converted to Christianity, and appears to have been a zealous friend to religion, while he won the love of his subjects by his wisdom and virtue. Michael Drayton in his “Poly-Olbion,” thus refers to him :—

“Great Lucius that good king ; to whom we chiefly owe  
This happiness we have, Christ crucify’d to know :  
As Britain to her praise received the Christian faith,  
After that Word-made man our dear Redeemer’s death  
Within two hundred years.”

This prince, anxious to understand fully the religion which he professed, wrote to Eleutherius, then Bishop of Rome, for instructions, and a copy of one of the letters of the Bishop is to be seen in Fox’s *Acts and Monuments*.

Lucius cleared the idols from the Pagan temples, consecrated them to the Christian worship, and also built some churches. Whether, as old records tell, the church near Dover Castle was raised by him, or whether, as some writers suppose, it was built some centuries after, by the masons who followed Augustine into Britain, cannot now be ascertained, but there is no evidence to prove that Lucius was not its founder.

Some years of darkness and gloom followed this period of Britain's history. Persecution, and even martyrdom were common in our island, until A.D. 306, when Constantine the Great made Christianity the religion of the Roman Empire. After his death came a farther period of gloom and wickedness, and the Saxons brought idolatry, with the fire and the sword, till A.D. 596, when Augustine visited our land. From this period we have authentic accounts of this church, as Augustine dedicated it to the Virgin, and performed masses within its walls. If the account of its origin under Lucius be correct, we may also believe the chronicles of the monks, which state that 400 years before this period, the church had been dedicated to Christ. It is not improbable that Augustine might be ignorant of this fact.

In this old church for many centuries after, masses were daily said, and sung, and prayers were offered for the living and the dead, and for the recovery of the Holy Land from the infidel. Here the font, the eucharist, and the anointing oil were duly guarded; and here, even as late as the reign of Queen Elizabeth, were vestiges of an altar, while daily service was performed until the year 1690. In 1711, a chalice and paten which had belonged to the communion service of this ancient church, were given to the church in St. James's Parish, Dover, and the sacrament is performed with these ancient reliques even at the present day.

A college which was founded by Edbald, son of Ethelbert, near a part of the Castle buildings, called Colton's Gate, with 26 canons and a provost, had also been removed into the town in 700, when the church of St. Martin, now a ruin, was completed; and eighty-two years earlier, a costly monument which had been reared to the memory of Henry Howard, Earl of Northampton, was, on account of the ruinous condition of the building, taken to a chapel at Greenwich. A sumptuous monument also once adorned this church, which had been built in memory of Sir Robert Ashton, Knt., Treasurer of England, and Constable of the Castle, who was buried there in 1381; but all the glory of the stately building has departed.

"Where are the ceaseless and unnoted feet,  
That wore a pavement path with kneeling prayers?  
Where is the coffin? where the winding-sheet?  
And monuments which nobles had for theirs,  
When death drew nigh and closed life's long account of cares?"

Whether the Roman works in the Castle are all comprehended (as one of its historians, Mr. Lyon, believes) within the fosse and parapet which surrounds the church and lighthouse—or whether, as Darell contends, the Praetorium of the Romans occupied the site of the present Keep—is difficult to determine, but most of the superstructures appear to be of Saxon origin.

The principal building, the Keep, was so called because it was built in the centre of the quadrangle which the Saxons termed the Keep—and which was their point of greatest security. This large and massy square building has its four angles placed in a direct line with the four points of the compass, and its foundations are generally twenty-four feet, and in some places much more in thickness, and notwithstanding various alterations

made at different periods in the building, it bears undoubted evidence of its antiquity. According to an ancient chronicle its foundation was laid about the year 1153. Some few rooms and passages, separated by thick walls, and these enclosed in some which are still more massy, show that, in the erection of this part of the building, strength to resist, rather than elegance and comfort, was the desired object.

The ground-floor buildings had, in more ancient times, no mode of entrance, and communicated with the story above by means of circular stone stairs in the north and south angles; but there are now two or three modern entrances to this part of the Castle. A large room, containing two thick pillars and three arches, appears to have been a depository for stores, and to have received only such dim glimpses of daylight as could reach it from four loopholes. A gallery, fifty-four feet long and twelve feet wide, in the south-western wall, was also lighted by two loopholes.

A singular mode of construction characterised the loopholes of the square room, reminding us of their warlike intent and of the mode of warfare of our ancestors. The opening within was very high, and about eight feet wide. The lower part tended upwards in a flight of steps, narrowing gradually, while a circular arch was raised over them to the summit. Here a body of archers might safely discharge their weapons on an enemy in the square below, for taking aim from the top of the steps, their foes could neither see the hand which discharged the shaft, nor send it back with any hope of aim; for were this attempted the weapon would fall powerless upon the arch. In the eastern angles were two of those drear dungeons which we find in old castles, standing monuments of cruelty and implacable revenge, and too often enclosing instruments of torture, at which Englishmen of modern days would shudder. Here the innocent or the guilty may have perished in gloom and famine in a living grave.

The ancient entrance to the Castle Keep was by means of a flight of steps, which in those days led to a noble vestibule, about fourteen feet above the quadrangle, and which extends a considerable distance to the right of the entrance. On the right of this vestibule is the Guard Room, and opposite to it is the Royal Chapel, still preserving its old Saxon arches. As we wander amid the silent gloom of this ancient chapel, the thoughts revert to times when monarchs and soldiers and long trains of priests came hither to offer their devotions, and when the loud anthem rose in the air amid the screams of the sea-gulls, and the sound of the waves which dashed against the cliffs:—

"And though the hypocrite hath shuffled here,  
Here, too, from earnest lips did often glide  
The words of men mistaken but sincere."

From the vestibule was an entrance to the second or highest story of the building, in which were the Royal apartments, and at the top of the stairs, ascending to the Court-yard, were the well-fortified gates leading to the vestibule. Another pair of well-defended gates opened on a space where was a flight of steps on the north-east side of the building, leading to the state-rooms, and farther up were other gates defended by a portcullis; while on the landing places on each side of the stairs were concealed galleries for archers and spearmen, who being hidden from the enemy, must have had power to harass and destroy them with impunity. Most of the secret recesses have been destroyed in the course of modern alterations, but enough remains to show how well suited they were to the design for which they were constructed.

At the summit of the stairs at the left of the entrance of the Royal apartments, and in the thickness of the wall, is the celebrated well which the chroniclers of Dover Castle tell us the Duke of Normandy required Harold to deliver up to him on the death of King Edward. Some French prisoners, who, during the reign of Queen Anne, were confined in the Castle, filled it nearly up with rubbish, and it is now arched over, lest an unwary footstep should betray the passer by to sudden death. An aperture is left at the summit of the arch, and a plumbmet let down through this, descends to the depth of 293 feet, whereas the former depth must have been about 400 feet to the water.

In 1800, bomb-proof arches were constructed over this massy Keep, and cannons were mounted on its turreted walls.

The Saxons surrounded their fortifications with a strong wall where the green ivy and the yellow clumps of wall-flowers now luxuriate in wild beauty. Towers, gates, and bridges were placed at irregular distances, and the Normans in the time of William the Conqueror, repaired the breaches in this wall which time or warfare had made, and appear to have built some portion of that which now remains. Godwin's Tower, and the Colton Gate, with several towers which are now destroyed; were built by the Saxons; as was also Suffolk's Tower, which Edward IV. converted into a magnificent mansion for his brother-in-law the Duke of Suffolk. The King's Gate, now but a ruined outwork, was also one of their strong fortifications, while King Arthur's Gate, and some smaller towers, as well as that apartment called Arthur's Lesser Hall, were also built by the Saxons. Their favourite hero King Arthur, is supposed to have held his court in Dover Castle. Camden says that he had read from a note table hung on the walls of the Castle, that King Arthur and his knights vanquished some rebels here; and some of our good antiquaries consider these surmises probable as these buildings preserve his memory in their names. Arthur's Lesser Hall is also called by the name of Arthur's Queen, Guenever's Chamber.

Some of the Norman fortifications are still in a good state of preservation, though nothing but the ruins of a gateway under the cliff remains to tell of the old gate, with tower and drawbridge, which was known once by the name of Monks' Gate, perhaps because the canons or secular priests resided there. The New Entrance, as it is called, was constructed in 1797, to the north-westward of Monks' Gate, and has a drawbridge and various other defences.

Two towers in the wall, on a line with the edge of the cliff, are very conspicuous features in the building. These are Rokesley's and Fulbert de Dovre's towers. Farther on are some smaller towers, and beyond them in an angle of the Saxon wall is the stately building called Peverell, Beauchamp, or Marshall's Tower, which, during the last century, was commonly termed the Bell Tower. This was well planned for defence, having several rooms for soldiers, and an embattled platform for the bowmen, whence they had a command of the whole of the hill between the Castle and the town. A noble-arched gateway, a ditch, and a drawbridge, also belonged to the tower. The ditch is now filled up, and the piers of the bridge before the arched gateway were brought to light in 1771, when digging for a foundation for a new wall, the old one having at that time fallen into the ditch.

Queen Mary's Tower, which was repaired by this Queen, Fienes, Newgate, or Constable's Tower, raised on the site of one more ancient, and several other Norman towers, are yet memorials of the old grandeur of

our noble Castle. This Constable's Tower was a magnificent stronghold, with gate and bridge, and portcullis, and subterranean passages, built with skill and strength; though their old rooms must, from the deficiency of light, have been drear and gloomy, till modern improvements admitted the sunshine and free ventilation there, and fitted the apartments for the occasional residence of the Lieutenant-Governor of the Castle and the visits of princes and nobles.

As might be supposed, from the warlike times in which the Norman fortifications were built, many of them are remarkable for the ingenuity and strength of their means of defence. Some of these were raised by William the Conqueror, but some of the most important were constructed by Hubert de Burgh, who served his king, the weak and tyrannical John, with the utmost bravery and loyalty, and with an integrity which has left to all times a noble record. At the period when the greater number of the barons withheld the power of the king, and while Louis the Dauphin of France was making preparations to invade England, and had brought a fleet of 680 ships to Stonar, in the Isle of Thanet, Hubert de Burgh was the governor of Dover Castle. All Kent, even the brave Kent, whose motto "Invicta" has been well sustained by Kentish men, yet now wearied with the folly and tyranny of their sovereign, succumbed to the French king, only Dover Castle still resisting his army. The Castle was in a state of siege when John died, and the Dauphin sent to Hubert de Burgh, inviting him to capitulate, and urging, among other reasons for doing so, that the Sovereign to whom he owed allegiance was now no more, and that he might now swear obedience to a prince whom his countrymen had acknowledged king. But Hubert with true patriotic spirit, refused to give up the Castle to a foreign enemy, and all threats and persuasions proving ineffectual, the Dauphin withdrew.

Among the numerous improvements made by this spirited governor, were several towers, as Fitzwilliam's Tower, which had a massive gate hung on large pivots in stone sockets, and fastened with bars in the wall. This gate could be drawn up, and if suddenly let down against the stone abutments of the building, its weight and velocity would have driven back even a large army. This tower is now fortified according to the modern plans of military defences. Albrinci's Tower, another fortification of this period, with its loopholes, platform, and galleries, and the contrivances in its walls for pouring down hot sand, scalding water, or melted lead on the heads of the enemy, is another memorial of the terrible works of warfare.

During a long period of years, Fulbert de Dovre's Tower has been converted into a prison for offenders against the revenue laws and for debtors. With that carelessness for human life which belongs to a less enlightened age and people, this prison was not only rendered wretched to its inmates, by want of space and air, but there was actually no fund to supply them with food. Here, doubtless, many a one has died a lingering death caused by that "hope deferred which maketh the heart sick," or slowly pined with hunger. It is melancholy to think that in the time of some old persons now living in Dover, people confined in this prison have, by letters or other means, appealed to strangers for bread to keep them from starving, and some have been known to die of want; for until the year 1796 no provision was allowed. Since that period several improvements have been made in the prison itself, and a small fund is given for the prisoners. Even now as the passenger walks up the military road, his attention is

arrested by the sound of a bell, and looking towards the grating on the side of the tower, he reads an appeal to the passer-by to remember the poor debtors.

Those who do not mind the chill and darkness should follow the guide down into what are called the underground works. Many of these were constructed during the expectation of the French invasion in 1793, and extensive barracks were also excavated in the solid rock which are capable of accommodating a garrison of three or four thousand men ; while shafts, and souterrains, and other modes of resistance serve to give to those little acquainted with military defences, some idea of the use of a castellated fortress during a season of warfare.



THE CASTLE AS SEEN FROM THE PENT.

But we must quit the old Castle, though we would fain tell of the celebrated men, who from the earliest ages have commanded it. We would linger over the chronicles which relate how Hengist took possession of the fortress, and conferred its command on his brother Horsa ; how Edbald, son of Ethelbert, founded the college near Colton's gate ; of the wicked Earl Godwin and of his son Harold, who in turns governed it. We recal the days when William the Conqueror was at length victorious over the brave governor the Baron of Ashburnham, and stayed eight days at Dover Castle, putting to death the baron and his sons for a patriotism which in modern days, the hardest heart would respect. Many a noble besides Hubert de Burgh has been governor of the Castle : among these were Lord Cobham, and Sir Simon de Mountford ; and many a prince has visited it in times of peace. Here Henry VIII. spent some days with Anne Boleyn. Here Charles I. met Henrietta of France, when, an old manuscript describes her as "nimble and quick, black-eyed, brown-haired, and in a word a brave lady." Here, too, in later days, amid the sad vicissitudes of fortune, the king, the queen, and the princess Mary, were again at Dover Castle, in sorrow and almost alone ; while the sounding of the surges which before

seemed the glad response to their bounding hopes, must have seemed now like the dirge of their fallen greatness.

Besides the attacks made by foreigners on this fortress, Dover Castle was wrested from the king in the commencement of the civil war between Charles and his Parliament; and the Loyalist army sent to besiege it were obliged to leave behind their stores and artillery, and retreat before the opposite party.

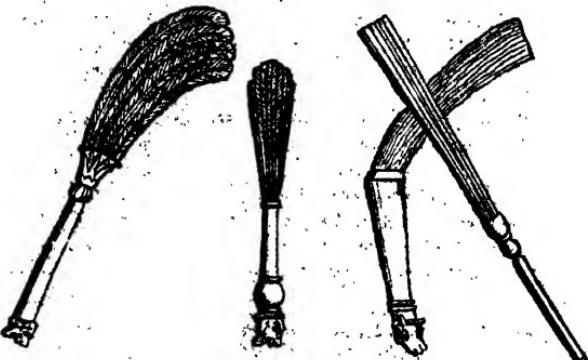
The visitor while walking around the outworks will see the handsome piece of brass ordnance, commonly called Queen Elizabeth's Pocket-Pistol, which was presented to that sovereign by the States of Holland, as a mark of gratitude for the aid which she had given them against Spain. It is twenty-four feet long, and its touch-hole was formerly adorned with a ring of gold, but the precious metal has long since disappeared.

Such are the ruins of Dover Castle; and could its old walls tell of its records, what a mingled tale of weal and woe would be theirs! Of the proud man's scorn, of the broken heart; of the dread cruelties of fierce war, of the slow sufferings of pining sorrow. Long may the surges and the wild winds, and the lark's morning song, be uninterrupted by less peaceful notes of music! Long may the flag "that has braved a thousand years" wave from its parapets over the town below, and the sound of the peaceful Sabbath bell invite its martial multitude to the Sabbath prayer.

#### NINEVEH.—THE COURT (*continued*).

ONE of the Ninevite alabasters in the British Museum represents the monarch returning to his palace after the enjoyment of the chase, and gives us some insight into the etiquette of the court. Having reached the palace, the king alighted from his chariot, and was met by the high officers of the royal household. First came the cup-bearer, who presented his master with the prepared beverage, probably weak and sweet wine, or a drink analogous to the *sherbet* of the present day, a sort of lemonade, flavoured with the juices of other fruits. How delicious such a draught is, those well know who have felt the sultriness of a tropical climate; and those will readily understand why, to one coming in from the arduous chase, parched with the heat and exercise, the cooling beverage should be the first requirement.

The cup-bearer having presented the cup to his lord, waved over his head the fly-whisk, to disperse the flies which in hot climates quickly accu-



FLY WHISKS.

mulate around sweetened fluids and foods of all kinds, or to answer the same purpose as a fan with us.

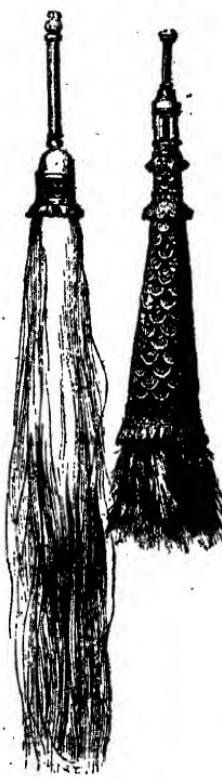
This implement in its structure and use very closely resembled those that are used at this day in Oriental courts; and, like them, had some varieties of form. The most common consisted of a bundle of slender filaments, set in a handle, the extremity of which was frequently carved into the head of an animal. Others were made of delicate flexible feathers set in a similar handle.

Interesting specimens of this implement were exhibited in the Crystal Palace. The Indian Collection contained several *chowries*, as they are called, of the former construction, some made wholly of ivory, the filamentous part composed of thin narrow strips of that substance, others of sandal-wood, others of rosewood; but the most common are formed of the wiry nervures of palm-leaves. Some of great beauty called *moarchals*, intended more for state than use, consist of a large handle of a funnel-like form, made of gold or silver filagree-work, in which are set the decomposed feathers of the bird of Paradise; perhaps represented by the left-hand figure in the above engraving of Assyrian specimens.

When the king had satisfied his thirst, the cup-bearer presented to him the napkin, a cloth very narrow but of great length, richly embroidered and fringed at each end, which he bore, exactly as the analogous *elmdr-hama* is borne in the present day, over the left shoulder, hanging down before and behind nearly to the ground. The functionary, it seems, having respectfully and gracefully delivered the cup to the monarch with his right hand, immediately transferred the fly-whisk from his left, in which he had hitherto carried it, to his right, and thus let the former hand free to take hold of the napkin with his fingers, and hold it out from his breast without removing it from his shoulder, that his royal master might wipe his mouth without intermitting the waving of the fly-whisk. The officer who held this important station was a eunuch.

Beside the cup-bearer stood a person evidently of high consideration, who, from the frequency with which he is represented in courtly scenes, and the circumstances in which he is seen, has been supposed to be the vizier, or chief adviser of the king, or what we should call his prime minister. The magnificence of his dress, second only to that of the sovereign himself, his carefully and elaborately arranged hair and beard, and the peculiar form of his diadem, indicate the high dignity of this functionary; yet he meekly stood in the presence of his master, with folded hands, in that attitude of calm, passive reverence, which to this day declares in eastern courts how truly the highest personages of the empire are the slaves of the autocrat.\*

\* This has often been illustrated: we take an example from Mr. Fraser's "History of Persia." "The Shah is, in fact, the government, the nation. All



INDIAN CHOWRIE AND  
MOARCHAL.

Below the vizier and the cup-bearer in rank, but following close behind them came another eunuch dressed in a long plain robe, slightly bordered and fringed (compared with those of the officers of whom we have spoken), wearing around his head a fillet of different form, inferior in splendour to that of the vizier, yet ornamented in front with a large button, which was probably a gem. He wore no arms; and in all probability held the responsible station of chief of the household, analogous to the modern Kilsar Aga, in the Ottoman Court, who superintends the seraglio of the royal palace. He received his returning lord, also, with folded hands, the palms crossed the one upon the other, in front of the breast.

After this officer came the minstrels, whose duty it was to welcome their master's return with the psaltery and harp, and probably to sing to the music of their instruments the praises of his valour, his majesty, or his clemency, in measures of their own composing. Two of these only are represented in the bas-relief, but possibly, as Mr. Bonomi has suggested, these may conventionally represent a whole band. They were dressed in long robes, wore their hair and beards copious and elaborately dressed, and carried ten-stringed harps suspended in front of their breasts by a belt around the neck. These harps were of singular structure; apparently a

are his servants, his slaves; to be raised into affluence and favour at his pleasure, to be degraded and destroyed at his caprice without remonstrance or appeal. 'There,' said Futeh Ali, one day to the British Envoy, in conversing on the difference between a king in England and in Persia.—'There stand Solyman Khan Kujur, and several more of the first chiefs of the empire; I can cut off all their heads if I please. Can I not?' said he addressing them. 'Assuredly, Kibleh Allum! (Point of the World's adoration!) if it is your pleasure.'—'Now that is real power,' said his majesty, turning to the Envoy."



KING MET BY HIS COURTEES.

narrow concave sounding-board formed the base, from the front of which rose at right angles a pillar terminating in an open human hand. The strings passed from the pillar to the sounding-board across the angle, and were tightened by pegs inserted at regular distances along the former; they were thus graduated in length. Yet as no support appears to have existed between the top of the pillar and the other end of the board, it is difficult to imagine how the instrument could be put into tune, for the tightening of the strings must soon have strained the pillar out of its socket, or broken it. It is remarkable that the same apparent defect existed in the harps of Ancient Egypt. Threads, perhaps of silk, hung down from the pegs to a considerable distance, and these terminated evenly in a bunch of tassels. These harps were carried under the left arm, the fingers of which hand were used to stop or twang the chords, which were struck with a plectrum carried in the right hand.

The custom of maintaining musicians in the king's court is repeatedly alluded to in Scripture. The employment of David to "play with his hand" in the palace of Saul, was indeed a requirement of that monarch's personal malady rather than of royal pomp. But in the retinue of the gorgeous Solomon we find them taking their place as regular retainers :

"I gathered me also silver and gold, and the peculiar treasure of kings and of the provinces: I gat me men singers and women singers, and the delights of the sons of men, as musical instruments, and that of all sorts." (Eccles. ii. 8.)

That music ordinarily formed a part of the routine of the Persian Court, is implied in what we are told of Darius, on the occasion of Daniel's being cast to the lions :—

"Then the king went to his palace, and passed the night fasting: neither were instruments of musick brought before him: and his sleep went from him." (Dan. vi. 18.)

These are all the officers and attendants that are represented in the bas-relief as welcoming the king back to his palace. There are, indeed, other personages represented, but they accompany the monarch, and return with him. These are the armour-bearers, the *silikdars* of modern times, whose office and appearance we shall have another occasion of considering in detail.

#### LETTING AND HIRING.

EVERY man ought to be at liberty to sell, let, or use in any way he likes best, his house, or land, or anything that is his property. There are some countries in the world; indeed, inhabited by half-savage tribes, such as the Tartars, where land is not private property, but is all one great common, on which every man turns out his cattle to feed. These people, of course, lead a wandering life, dwelling in tents, and removing from place to place, in search of fresh pasture; and the land, as you may suppose, is never cultivated, as no one would think of sowing seed, when another might reap the harvest.

There are other countries, again, where any man may keep possession of a piece of ground which he has ploughed and sown, till he has gathered in the crop; but as soon as ever it is out of his occupation, any one else is free to take possession of it. This is the case in many parts of Arabia at this day; and such seems to have been the state of many parts of the land

of Canaan while Abraham and Isaac dwelt there. (See Gen. xxvi. 12, and Acts vii. 5.)

But it is plain that, in such a state of things, it would not be worth any one's while to spend money in fencing, draining, and manuring the land; because he would know that if he were disabled by sickness from continuing to cultivate it, or if he died leaving young children, it would pass into other hands, and all he had spent would be lost to him.

In order, therefore, that the land should be properly cultivated, it must be private property; and if a piece of land is your property, you ought to be at liberty to dispose of it like any other property; either to sell it, or to cultivate it yourself, or to employ a bailiff and labourers to cultivate it for you, or to let it to a farmer.

When land is scarce in proportion to the number of people, in any country, the hire, or rent, as it is called, which the farmer pays for the use of it, will be the greater. The reason of this is very simple, and easy to be understood. The price of land, either to buy or to hire, increases, like the price of everything else, in proportion to the scarcity of it, compared with the number of those who want it, and can afford to pay for it. When horses are scarce, in proportion to those who want them, and can afford to pay for them, the price or the hire of a horse increases; and so it is with everything else, and with land among the rest. A farmer desires land, because he hopes to make a profit by raising corn and other crops from it; and he consents to pay rent for it, because he cannot obtain land without. And so it is with everything that we buy or hire. We consent to pay for it as much as we think it worth to us, when we desire to have it, and cannot obtain it without that payment. Land is desired, therefore, on account of the crops that may be raised from it; and rent is paid for it, because it cannot be had without rent. You may have land for nothing in the Arabian desert; but no one desires it there, because it will produce nothing. But, again, in many of the uncleared parts of America, land may be had for nothing, though the soil is good and will bear plentiful crops. But there the land is so abundant, and the people so few, that any one may have as much as he chooses to clear. In this country, therefore, land that will produce any crops is of value, because the supply of it is limited. In the wilds of America it is of no value; not because (like the Arabian deserts) it will produce nothing, but because, though it is very fertile, there is enough, and much more than enough, for every one who wants it. But even in the newly-settled parts of America the land becomes of some value, as soon as it is cleared of wood, and has roads made through or near it. And many persons are willing to buy, or to pay rent for, such land, even when they might have land for nothing in the depth of the forests. But then they would have to clear the ground of trees, and would be obliged to send, perhaps, some hundreds of miles to a market, to sell the corn, and to buy what they wanted.

But as land grows scarcer in proportion to the number of people, that is, as the people multiply, the owners of it find that they can obtain a higher and higher rent. This, as I have explained, is because everything that is useful becomes an article of value, that is, will fetch a price, when it is limited in quantity.

Some persons fancy that the reason why land fetches a rent, is because the food and other things produced by land afford the necessary support of man's life. But they do not consider that air, which we do not pay for, is as necessary to life as food; and that no one would pay for anything

which he might have without payment. If good land were as abundant in this country, in proportion to the people, as it is in some of the wilds of America, every one might take as much as he pleased for nothing. It would produce corn and other necessaries, as it does now : yet he would pay nothing but the labour of cultivation. Here, on the contrary, the only kind of land for which no one would pay rent is that which will produce nothing, and is of no use at all ; like the shingles of the beach on many parts of the coast. However scarce land (or any other article) may be, no one will pay for that which is useless ; and, however useful it may be, he will not pay for that which is so plentiful as to be had for nothing. As was explained before, the value of anything is not caused by its scarcity alone, or by its usefulness alone, but by both together.

Some, again, fancy that the rent is paid on account of the expense which the owner of the soil (or landlord as he is called) has laid out in enclosing the land, manuring it, and bringing it into cultivation. And some of our land certainly has in this way cost the landlord a great expense, which he would not have bestowed if he had not expected to be repaid by the rent. But it is not this expense that is the cause of the rent's being paid ; for if he had laid out ever so much in trying to improve the land, still, if he did not bring it to produce the more, he would not obtain the higher rent. And, on the other hand, though your land may have cost you nothing, still, if it will produce anything, and there is not enough of it for everybody, you may always obtain a rent for it. There are pastures of great extent in some parts of this country, which have never had any expense laid out on them. But they naturally produce grass for sheep ; and farmers accordingly pay rent for them.

Again, there are on some parts of the coast rocks which are bare only at low water, and are covered by the sea at every tide. On these there grows naturally a kind of sea-weed called kali, or kelp, which is regularly cut and carried away to be dried and burned for the sake of the ashes used in making soap and glass. These rocks are let by the owners of them to those who make a trade of gathering this kelp for sale. Now, you see by this, that rent cannot depend on the land's producing food for man, or on the expenses laid out in bringing it into cultivation ; for there is rent paid for these rocks, though they produce no food, and though they never have been or can be cultivated.

Sometimes, again, rent is paid for a piece of ground on account of its situation, even though nothing grows on it. A fisherman, for instance, may be glad to rent a piece of the sea-beach in a spot where it is convenient for him to draw up his boat, and spread his nets to dry, and build his cottage and storehouses.

#### THE NATIVES OF AFRICA.—A NARRATIVE.

AFRICA is the least-visited and least-known portion of the Old World ; nor can we wonder, since there is much to deter the traveller from exploring this continent. The interior consists of vast sandy deserts, and ranges of lofty mountains. The heat of the tropical sun is intolerable to Europeans, and the climate throughout a large extent is pestilential and deadly. The inhabitants are fierce and inhospitable ; the plains swarm with wild beasts, and the rivers with noxious insects. The map will show you that this continent is a solid mass, little intersected by bays, gulfs, or navigable rivers. The northern coast is rocky and iron-bound. Communication is

consequently difficult and dangerous, and few but the adventurous have dared to explore the interior. Of these a large proportion (amongst them Mungo Park, our countryman) have found untimely graves.



The description of the natives of Africa will exhibit in a *negative*, but convincing shape, the blessings of Christianity. You will find that where the Gospel is not received, as is unhappily the case throughout the chief part of Africa, the corruption of human nature appears in an appalling shape. Barbarous cruelties, treacheries, and impurities prevail among the Aborigines, and habits of discomfort and filth prove the absence of the civilization which characterises Christian nations. For, much as the precepts of the Saviour are disregarded in countries professedly Christian, still the golden rule of charity has softened and leavened their social life. Churches, schools, hospitals, asylums for the needy, and the arts of peace, have mitigated the natural ferocity of man, which in Africa still reigns unchecked and uncontrolled by religion.

The natives of Africa may be classed as follows:—

1. Egyptians.
2. Moors.
3. Negro nations.
4. Inhabitants of the Cape Colony, consisting of  
European settlers.  
Hottentots.  
Bushmen.  
Kaffirs.

1. Egypt differs entirely from all other parts of Africa. This may easily be accounted for. If you examine the map, you will perceive that before the passage round the "Cape of Good Hope" was discovered by the Portuguese, the Red Sea was the obvious channel for the traffic of the Indics with the Levant. The civilization of China and India followed the course of the river Nile, and Egypt was famous for architecture, astronomy, science, and art, at a time when our forefathers in Britain were mere savages, clothed in skins and worshipping idols.

We now revert to an early date in order to trace the origin of the "natives of Africa." The whole world was overspread by the descendants of Noah, and it is generally believed that the Asiatics are of the race of Shem, the Europeans of the family of Japhet; whilst Africa was peopled by the children of Ham, who was the Jupiter Ammon of mythology. The curse of Noah on this branch seems to have laid a blight on the African continent.

A question of interest arises in treating of the dark complexions of the Negro nations of Africa. God made of one blood all the families of the earth. Was then this change of colour a gradual process, or a sudden and miraculous adaptation? Some have thought that the tropical heat made each succeeding generation more and more sable; but it appears more probable that the Almighty adapted the descendants of Ham by a miracle to the torrid zone, where their lot was cast. Ancient Egyptian pictures, found in the catacombs, represent the Ethiopian as *black*, and Jeremiah inquires, "Can the Ethiopian change his skin?" We can trace in this, as in all dispensations of the Creator, both wisdom and goodness. The black skin enables the African not only to bear, but to *enjoy* a degree of heat, which would be intolerable to the white man. Little African children in the West Indian schools love to bask in a sunshine and glare, which drive those of European blood to seek shade and shelter. The black colour absorbs heat, and hence the Negro's skin is cool, while that of the Englishman would be parched and blistered. The woolly matted hair of the Negro is a further adaptation to the climate, since it protects the skull from the rays of the vertical sun. European hair, however long, affords no such protection, as it does not thicken on the top of the head. The love of finery, inherent in the Negro character, induces the Negro women to make laughable and torturing efforts to part their hair and curl it in ringlets after the European fashion.

The dark skin, which enables the African to bear the heat of his native climate, has led to cruel abuses through the evil dispositions of men. The aptitude of the Negro to labour under a tropical sun was the original cause of the "slave trade." It was found that white men could not cultivate the rice, sugar, cotton, and coffee in the plantations of America, and hence the importation of Negroes.

The complexion of the Egyptians, though swarthy, is very distinct

from the tyoe of the Negro, nor is the hair of the same woolly description.

Many of the customs of modern Egypt are scriptural. The harbour of Alexandria is unlike European seaports. Camels are employed to convey the merchandise, and the natives wear long flowing dresses of bright colours, as in the days of the Pharaohs. When the writer visited the country, the old Pasha, Mehemet Ali, was "governor over all the land of Egypt." The birth of this extraordinary man occurred in the same year in which the Duke of Wellington, Bonaparte, and other memorable persons were born. Like many other eastern monarchs, Mehemet Ali gained his throne by bloodshed. The Mamelukes were massacred in the citadel of Cairo: only one effected his escape by leaping his horse over a high wall. The following is a specimen of the despotic authority of the Egyptian Viceroy: Bogos Bey, an Armenian, was unable to procure a large sum of money which the Pasha required. Mehemet Ali ordered that he should be thrown into the Nile. A merchant of Cairo released him, and kept him hidden, until the Pasha expressed regret at having sacrificed so useful a minister. Bogos was reinstated, but the guards who surrendered him were put to death. The conscription is another exercise of tyranny which oppresses the Egyptians. The soldiers are taken from their homes by violence, and compelled to serve in the Pasha's armies at his good pleasure.

Egyptian mourners still express their grief by loud cries, as in the days of Pharaoh, when the first-born were slain. "Wailings for the dead" are frequently alluded to in the Holy Scriptures.

Christianity flourished in Egypt many centuries ago. St. Mark is said to have been the Bishop of Alexandria, and other men of note were pastors and teachers in the Egyptian churches and schools. Heresies, however, and corruptions crept in, and reduced this branch of the eastern Church to the state of degradation in which it now lies.

Upper Egypt was the birthplace of the monastic system. The first founders were devout men, who, disgusted with the vices of the heathen, retired to solitude, study, and prayer, and supported themselves by the labour of their hands. In after times this system became perverted, and at the present day the eastern convents and monasteries frequently bring discredit on the Christian religion by the feuds and jealousies of the rival communions. Mr. Curzon describes the Egyptian monks in his interesting work on the Levant. One brotherhood inhabits an almost inaccessible rock on the shores of the Nile. The only approach to the convent, which is called "the convent of the pulley," is by a cleft in the rocks, resembling a chimney, up which the monks climb. These precautions for security are necessary in the unsettled state of the country. The brethren appear to be almost amphibious; they swim out into the Nile to waylay the boats, and to entreat the charity of the passing traveller. Another brotherhood of Abyssinian monks offers a strange appearance, being black as Negroes, and dressed in cloaks and tunics of yellow leather.

The banks of the Nile, as far as the cataracts, abound with the ruins of heathen temples and tombs. The votive offerings of ancient idolaters put to shame the niggardly efforts of modern Christians. The pagan idols, Apis and Isis, received the tribute of a more generous liberality than men are disposed to offer to the one true God in the nineteenth century, when Mammon absorbs much that might be more wisely dedicated. It is of course admitted that the slave labour of the ancients made it more feasible to carry out great works, than it would be according to the modern scale of

payments. It is probable that some of the existing temples and pyramids were erected by the Israelites, and that the tale of bricks, exacted by their taskmasters, was employed in some of the buildings still extant.

The traffic of the Nile does not appear to have extended in ancient time much beyond the site of Thebes, the city of "a hundred gates." Thither the merchandise of the east was carried on dromedaries and camels from Kosseir, a port on the Red Sea. By this route the spices of India were imported to Europe. The navigation of the Nile is impeded on the borders of Nubia by several cataracts or waterfalls, beyond which two rivers form a junction, *i.e.*, the White Nile from the west, and the Blue Nile from the east.

A great work was undertaken on the banks of the Nile some thousands of years ago. The historian Herodotus mentions a Monolithic temple, *i.e.*, a temple formed out of *one* block of stone. This gigantic mass was quarried near the cataract, and was lowered upon a framework or raft. At the periodical inundation of the Nile, the waters floated this raft, and in the course of two seasons it reached Heliopolis, a distance of several hundred miles. When the waters abated, it was left high and dry at the destined site.

This incident leads me to remark upon the annual inundations, which are the cause of the fertility of Egypt. In that country, without irrigation nothing can grow. It becomes, therefore, a matter of vital importance, that the river should rise to a sufficient height to overflow the entire valley, and deposit the rich slime, in which the grain sown yields often a hundredfold.

At the usual season, when the rains in Abyssinia have swollen the current, it becomes the absorbing interest of the Egyptians to watch its rise. A pillar, called the Nilometer, marks the height of the flood, and the natives are fully aware that their sustenance for the coming year depends upon the inundation, since rain is almost unknown in Egypt, a fact alluded to by the prophet Zechariah (xiv. 18). When the flood is at its height, Egypt is one vast sea: the high grounds on which the villages are built become islands, and communication is stopped except by boats. This is the season for mirth and amusement among the people. At Grand Cairo great festivities mark the opening of the canal. A band of Arab labourers are engaged in cutting down the dam which separates the canal from the river. The viceroy and his attendants survey from a magnificent tent the proceedings. When the dam begins to give way, the excitement becomes intense. The workmen redouble their efforts at no small peril of their lives. Showers of coins are thrown at them, and they are encouraged by the shouts of the people. At length the embankment is undermined, and the waters pour furiously into the dusty basin, which in a few weeks is covered with a luxuriant harvest.

As the river subsides, the labours of the husbandman begin. So soon as a narrow strip of the plain is left dry, grain is sown. The manner of sowing is scriptural: the peasant scatters the seed in the soft mud and covers it with his foot. As the waters abate, another patch is cultivated, and it often happens, that by the time the bank of the river is sown, the higher portion is ready for the sickle. As the inundation occurs once only in the year, the subsequent crops require irrigation, which is carried on systematically.

In ancient times the trade of India passed down the Nile to the Levant. The discovery of the passage round the Cape drew away this lucrative commerce from Egypt during several centuries. By a strange vicissitude the

old route has become once more the thoroughfare to the Indies. The "overland journey" (as it is termed) has brought India within a six-weeks' journey. The desert of Suez is alive with English travellers, and the correspondence of our Asiatic provinces is carried up the Nile and across the Isthmus to the Red Sea.

(*To be continued.*)

### HUMAN LEARNING NECESSARY.

**2 SAM. xii. 31.**—David is said to have put the Ammonites under saws and under harrows of iron, &c., which gives the impression of great cruelty on his part. Were there no answer to this, we must not shrink from charging him with whatever guilt might properly attach to the act, the Bible itself furnishing the principle by which to do so. But the original Hebrew admits of its being rendered instead of "under" "to" saws, &c., which implies nothing more than employing them as slaves in the most mean and laborious offices. The word translated "harrows of iron" may also be rendered "iron mines." It is indeed said that David cut them with saws; but seven of the Hebrew manuscripts collated by Dr. Kennicott have the word which means, "he put them to saws."

This illustration has been given to show the value of a knowledge of the learned languages, and of those diligent researches which learned men have made to throw light on Scripture. "Pertness and ignorance," as Bishop Horne remarks, "may ask a question in three lines, which it may cost thirty pages to answer." But thus has God sanctified the use of learning, and would teach the unlearned to respect it. "Some things in the Scriptures are hard, I deny it not," says Bishop Jewel: "it is very expedient that somewhat should be covered, to make us more diligent in reading, more desirous to understand, more fervent in prayer, more willing to ask the judgment of others, and to presume less on our own judgment." Mystery is only another name for our ignorance: "and those passages," as Boyle says, "which teach us nothing else, may at least teach us humility." We may also be assured, that while "the wicked shall not understand," and "the scorner seeketh wisdom and findeth it not," "the meek will he teach his way," "the meek will he beautify with salvation."

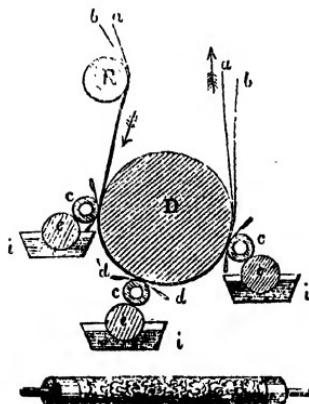
### THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN. CALICO PRINTING (*continued.*)

#### CYLINDER OR ROLLER PRINTING.

The greatest mechanical improvement in this art was the invention of cylinder or roller printing, said to have been first made by one Oberkampf, a calico printer at Jouy in France. The invention was also made, independently of him, by a Scotchman named Bell, and was practised about the year 1785 at Mohsey, near Preston. This style of printing has been cultivated with the greatest success in Lancashire, and is the chief cause of our superiority in this art over the continental printers, who are but little acquainted with

cylinder printing. By this style, not only is the work more accurately performed than with the wooden block, but the saving of time and labour is truly remarkable. One cylinder machine, attended by one man to regulate the rollers, is capable of printing as many pieces as one hundred men and one hundred girls could print with hand blocks in the same time; or, in other words, as much work may be executed by a cylinder machine in four minutes, as by the ordinary method of block printing in six hours. A length of calico equal to one mile can be printed off with four different colours in a single hour.

The means by which these extraordinary results are attained are sufficiently simple. The accompanying section shows the arrangement of the machine for printing a pattern upon calico in three colours: (*c*) is an engraved cylinder or roller, (also shown in a separate figure,) mounted



on a strong framework, so as to revolve against two other cylinders (*D*) and (*e*): the cylinder (*c*) is covered with woollen cloth, and dips into a trough (*i*), containing the colouring matter properly thickened. When this roller is made to revolve, it takes up a coating of the colour, and distributes it over the engraved roller (*c*). (*j*) is a large iron drum, the surface of which is rendered elastic by several folds of woollen cloth. Round this drum travels an endless web of blanketting (*a*) (*a*), in the direction of the arrows, accompanied also by the calico. (*b*) (*b*), which moves between it and the engraved cylinders. The pressure of the cylinders against each other is regulated, as occasion may require, by screws or levers.

As the cylinder (*c*) spreads the colour uniformly over the engraved cylinder (*c*), and it is wanted only in those depressed parts which form the pattern, it is obvious that the excess of colour must be removed, by some means, before the engraving comes in contact with the calico. This is accomplished by scraping the surface of the cylinder, as it revolves, with a sharp-edged knife or plate, usually of steel, called the *doctor* (*d*). This odd name has been accounted for in the

following way:—When Mr. Hargreaves, a partner in the factory of Monsey, near Preston (already alluded to as the place where cylinder printing was first introduced), was making some experiments with the process, one of his workmen who stood by said, “All this is very well, sir; but how will you remove the superfluous colour from the surface of the cylinder?” Mr. Hargreaves took up a common knife, which was near, and placing it horizontally against the revolving cylinder, at once showed its action in removing the colour; asking the operative, “What do you say to this?” After a moment’s pause of surprise and pleasure, the man replied, “Oh, sir, you have *doctored* it!” a common phrase for “You have cured it;” and the contrivance has ever since retained the name of *doctor*.

The doctor is so managed that the colour scraped off shall fall back into the trough (*i*). There are usually two doctors to each engraved cylinder; one called the *colour doctor*, and the other the *lint doctor* (*d*). The office of the latter is to remove the fibres which the roller acquires from the calico. Some colouring materials and mordants, such as those containing salts of copper, exert a corrosive action upon steel doctors: gum-metal, bronze, brass and iron alloys are therefore used instead of steel.

Some idea may be formed of the appearance of the cylinder machine from the sketch on the next page.

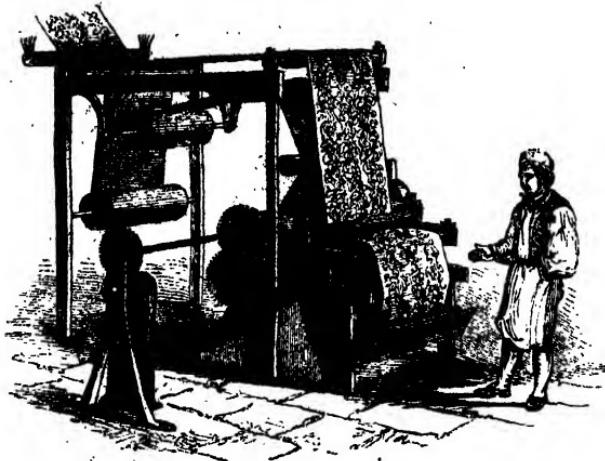
As many as eight colours may be applied at the same time, by having as many engraved rollers, each with its accompanying colour-trough, &c., revolving against the iron drum (*D*). The greatest nicety of arrangement is required to bring all these rollers to print the cloth at the precise spots required, but when once properly adjusted, each may be made to deposit its colour on the calico with certainty and regularity.

When the calico is printed, it is dried by being drawn through a long gallery or passage, which is commonly heated by the flue of a furnace which extends the whole length of the floor of the gallery. The upper surface of the gallery is covered with rough-cast iron plates, which become quickly heated, and present a good radiating

surface. A piece of calico, of twenty-eight yards, is usually drawn through the gallery in about two minutes.

The length of the printing roller may vary, according to the breadth of the calico to be printed, from thirty to forty inches; its diameter may be from four to six inches, or even a foot. Each roller is bored, and accurately turned, from a solid piece of metal. For some peculiar styles of pattern, the engraving is done by hand, but, as this is a costly operation, it is usual to adopt Mr. Perkins' method for transferring engravings from one surface to another by means of steel roller dies. The pattern is first drawn upon a scale of about three inches square, so that this size of figure being repeated a definite number of times, will cover the cylinder. This pattern is next engraved upon a roller of soft steel,

about one inch in diameter, and three inches long, so as to occupy its surface exactly. This roller, which is called the *die*, is next hardened by being brought to a red heat and then plunged into cold water. This hardened roller is then put into a rotatory press, and made to transfer its design to a similar roller, in a soft state, called the *mill*. As the design is sunk in the die, it appears in relief on the surface of the mill. This mill, being hardened, is put into a rotatory press, and is made to engrave or indent upon the large copper cylinder the whole of the intended pattern. By this process, the cost of an engraved cylinder may not be more than about 7*l*, but if engraved by hand it would cost upwards of 50*l*. By the same method, a worn-out cylinder can be easily restored, by rolling the mill over the copper surface.



CYLINDER PRINTING.

The pattern is also sometimes produced on the cylinder by *etching*. The cylinder is covered with a thin coat of varnish, and on this the pattern is drawn, with a diamond-pointed tracer. The cylinder is then immersed in dilute nitric acid, which corrodes or engraves all the parts from which the varnish has been removed by the tracer. The tracer is generally applied by a process similar to the eccentric chuck of a lathe, and thus the entire surface is covered with patterns, or groundworks of patterns,

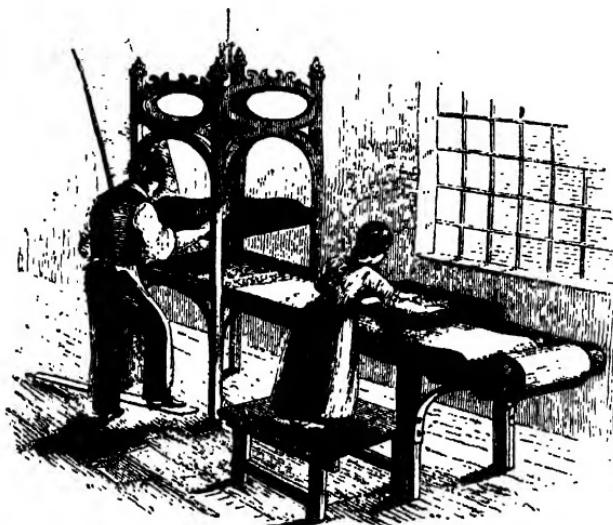
of infinite varieties of form, and some exceedingly beautiful. Cylinders, eccentrically engraved, are largely exported from Manchester, both to the Continent and to North America; and the foreign printer adds the pattern, either by hand or with the steel cylinder. The Germans send their own designs to be engraved on the cylinders, having previously selected the groundwork. The value of a copper roller, before it is engraved, is about 5*l*. or 7*l*. : the value of engraving varies from 5*l*. to 10*l*.

There are other methods of producing the design upon the printing cylinder, among which may be mentioned the electrotype. The design is also sometimes cut in relief upon wooden rollers: or formed by the insertion, edgewise, of flat pieces of copper wire. This is *surface printing*, which Dr. Ure thinks was probably so called because the thickened colour is applied to a tense *surface* of woollen

cloth, from which the roller takes it up by revolving in contact with the cloth. When these wooden rollers are combined with copper ones, the machine is called the *union* printing machine.

#### PRESS PRINTING.

The last method of calico printing is *press printing*, which is a refined improvement on block printing. By



PRESS PRINTING.

this style, several different colours can be executed at one impression. The cloth to be printed is wound upon a roller at one end of the printing table. The block containing the design, which is cast in mixed metal, is about  $2\frac{1}{2}$  feet square, and is supported, with its face downwards, in an iron frame, so as to be raised or lowered at pleasure. The face of the block is divided into as many stripes, crossways with the table, as there are colours to be printed. Now, supposing the pattern to be made up of five stripes, of different colours, each stripe six inches in breadth, and as long as the breadth of the cloth, the question is, how are the colours to be applied without mingling and disturbing each other?

Near one end of the table is a shallow tray or frame, resting upon

wheels, so as to be easily moved backwards and forwards along a railway. This frame contains a cushion, of about the same size as the face of the printing block, and by the side of the cushion are, arranged in a line, five little troughs, containing the thickened colours. By means of a long piece of wood, so formed as to dip into all the troughs at once, the tearer applies a small quantity of each of the five colours to the surface of the cushion, and then spreads them evenly into five stripes, by means of a brush, without any intermixture. The breadth of these stripes is the same as the breadth of the stereotype rows on the block.

The cushion being thus charged, the frame is moved along the railway until it comes immediately below the printing block which is then lowered

by the pressman upon the cushion, by which means each of the five stripes on the block is charged with its proper colour. The block is then raised, the colour frame withdrawn, and the block allowed to descend upon the cloth, which it imprints with five rows of different colours. When the block is raised, the cloth is drawn forward, in the direction of its length, about six inches, or exactly the width of one stripe on the block : the tearer again pushes forward the cushion

with more colour, and the block is again charged and applied to the cloth. As a length of the cloth equal to the width of a stripe is drawn from underneath the block at each impression, every part of the cloth is brought into contact with all the stripes on the block. The action of this machine is very beautiful ; but the utmost nicety is required in adjusting all the moving parts of the press, to prevent the colours from mingling and distorting the pattern.

#### THE GREAT EXHIBITION.

IT is an interesting fact that Chaucer, who wrote in 1380, has described in his poem, 'The House of Fame,' what appears to offer a curious parallel to the opening of the Crystal Palace in May 1851 :—

"As I slept I dreamt I was  
Within a temple made of glass,  
In which there were more images  
Of gold, standing in sundry stages,  
In more rich tabernacles  
And with jewels more pinacles,  
And more curious portraiture  
And quaint manner of figures  
Of gold work than I ever saw.

\* \* \* \* \*  
Then saw I stand on either side  
Straight down to the doors wide  
*From the dais many a pillar*  
Of metal that shone out full clear.

\* \* \* \* \*  
Thor gan I look about and see  
That ther came ent'ring in the hall,  
A right great company withal  
*And that of sundry regions*  
*Of all kinds of conditions*  
That dwell in earth beneath the moon,  
Poor and rich ; and all so soon  
As they were come into the hall,  
They gan on knees down to fall  
Before this same noble queen.  
'Madame,' said they, 'we be  
Folk that here do beseech thee  
That thou grant us now good fame,  
And let our works have a good name,  
In full recompensation  
Of good work give us good renown !'  
*Such a great congregation*  
*Of folk as I saw roam about,*  
Some within and some without,  
*Was never seen, nor shall be no more !'*

CHAUCER.

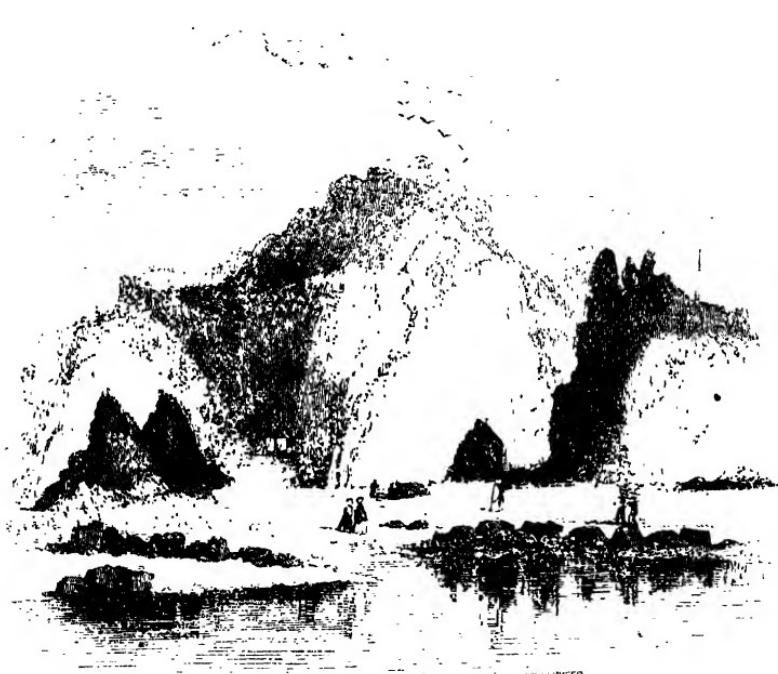
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SEA-SIDE PLEASURES.—No. I.



ILFRACOMBE.

At this season of the year, in which, from the close confined air, and the sun's rays reflected from walls and pavements, walking in our crowded cities is almost like walking in an oven, what a pleasant change it is, for those who are able to escape from endless brick and mortar, to run down a three or four hours' journey by rail, and find themselves amidst the scenery,

the quietness, and the breezes of the sea-shore ! The transition is, indeed, great : For the heated street, with its suffocating atmosphere, its dust, and unwholesome odours, you walk out of your pretty lodging upon the shingle-beach, perhaps a little cove, snugly ensconced between points of grey rock. The rounded pebbles at your feet, washed so clean and looking so brightly polished by the action of the waves, tempt you to become a child again ; and you detect yourself filling your pockets with the prettiest, before you are aware what you are doing. The sea is dancing and sparkling beneath the morning sun, breaking the rays into thousands of diamonds in the tiny ripple that the gentle breeze is raising ; and the petty wavelets that chase each other to the shore, make a sweet murmuring music, as the liquid dashing of the water mingles with the ringing of the pebbles that roll over each other. A pleasure-boat, gaily painted, is moored in the offing ; and as she lies with her head to the tide, rising and sinking with the gentle swell, you feel how delightful it will be to have a sail upon this blue sparkling sea ; when, presently, another skiff shoots round yonder point, her white sails trimmed to the breeze that is just sufficiently strong to heel her a little to one side, the water driving up from under her bows in a twin hillock, that streams foaming away on either side, while the gay laugh of a merry party in her stern-sheets, quickens your half-formed resolution to be soon afloat yourself.

Or, perhaps, you choose to scramble over the rocks, picking your way among the pools that lie in the hollows ; those sweet little clear pools in which the seaweeds are growing, and the tiny fishes are darting hither and thither. You slip in half a dozen times above your shoe-tops, and your feet are wet through in spite of all your caution ; but you do not mind, for you recollect that you are not liable to take cold from sea-water. You tumble about, too, among the rocks ; the projecting points and ledges are deceptive and insecure to the footsteps ; and the drapery of seaweeds, wherewith many of them are invested, is so slimy and slippery, that in striving to maintain your equilibrium, you throw yourself into more attitudes than a posture-master, and cut rather an undignified figure. But this only increases your amusement ; and as you peep into the crevices and hollows, and look at the shell-fishes crawling in their freedom, the sea-plants waving, so delicately feathery, the marine insects shooting about in the transparent water, sea-anemones of many colours expanding their disks like brilliant flowers, and strange uncouth creatures hiding themselves in the corners, or now and then creeping timorously out, and a hundred other things, strange and new to you, you feel that here is an endless store of delight, if you had but the requisite knowledge to enable you to avail yourself of it intelligently.

You are not, however, studying, but idling ; drinking in the delight of the scene without effort, and without any definite object, except that of enjoyment : and everything here is enjoyment. So you saunter on ; the rocky point is crossed, and here is a long beach of smooth yellow sand, extending for miles ; so smooth, that the fine lines left by the retiring waves of the last tide are distinctly seen, and every little shell thrown up catches the eye at once by its isolation. The sea-birds are busy and active ; gulls and terns are hovering over the water, and wheeling round in easy graceful flight ; and plovers and sandpipers of different kinds run with rapid patterning feet along the very edge of the rippling wave, picking at the minute insects and zoophytes which it washes up. Curious objects lie high and dry upon the sand ; a tortuous line of seaweeds heaped confusedly together,

and now shrivelled and blackened in the sun, shows how far the wash of the sea came up in the last heavy gale. They are not wholly black, for you see many among the mass as dry and withered as the rest, which are of various shades of bright red. The internal shell or bone of the cuttle, so white and soft, lies here; you take it up, and are charmed with the exquisite arrangement of its innumerable thin plates, so orderly and beautiful. And here is the leathery capsule, or egg, of a dog-fish, a sort of pillow-case made of a substance between leather and horn, with the four corners drawn out into long strings or tendrils, to twine around the weeds, and preserve the embryo from harm until it is hatched. You kick a shelly ball covered with perforated pimples in a beautifully regular pattern; it is the shell of the sea-urchin, emptied of its living animal, and deprived of its spines by being rolled about in the water. You walk on the sand where it is wet, covered every few moments by a wave higher than usual: hundreds of little holes are seen, riddling the surface like a sieve; and from one and another, just before your falling footsteps as you advance, a jet of water is spouted forth. Curious to know the meaning of this, you dig away the wet sand with your walking cane, or with your hands; but you find nothing. "How strange!" you say. Shall I explain to you the mystery? Each of these holes extends a great way into the sand, and is inhabited by a cockle, which, alarmed by your footsteps, retreats to the bottom of his burrow, ejecting a stream of water in the act. Your unskilful digging filled up the hole, and destroyed all traces of it; you would need a deep spade and prompt agility to expose the burrower; for he deepens his hole on alarm, faster than you can pursue him.

You retrace your steps, and seek the heights. Over the downs you wander, with their close short turf and tiny flowers. You get to the very edge of the cliffs, and gaze, half fearfully, down. How exhilarating! The breeze blows freshly, cooling the body heated by exercise in the sun, and invigorating the whole system. How delightful to throw yourself at full length upon the turf, half moss, half grass; or upon the springy, yielding heather, and inhale the air! to admire the projecting headlands on either hand, as they recede into successively diminishing proportions, and into more and more decidedly purple hues! to watch the craft of various sorts and sizes, coming and going; the stately man-of-war going out to her Mediterranean cruise; the tall Indiaman bringing in her costly freight; the coasters hurrying to and fro; the pilot-sloops hanging about, watching for the homeward-bound ships; the fishing-boats with their red sails, going out or returning: to gaze down into a cove bristling with points of rock, perhaps ere now the grave of some gallant vessel; and watch the sea as it comes rolling in before the increasing breeze, dashing its spray and foam far up on the cliffs, and listen to its thundering roar; to admire the variety and beauty of the flowers that grow in profuse luxuriance in such a situation, braving the wind and spray:—the thrift, with its bright green tufts of grassy leaves and numerous heads of rosy blossoms; the kidney vetch, of pale delicate yellow; the sheep's bit, of brilliant blue; the burnet rose, chastely white and most delightfully fragrant; the bird's foot lotus, with its scarlet-tipped buds and laughing yellow flowers; the pink sandwort; the purple bitter-vetch; the aromatic thyme; and hundreds of other interesting plants, many of which you will hardly find anywhere but in a locality like this, where they may sniff the sea-breeze. All this is charming, indeed, and you are ready to deprecate the stern necessity of ever going back to your chambers or your warehouse.

But a great portion of the charm is the novelty : when this is worn off the most interesting scenes and objects generally lose their interest. If you admire scenery, and are on a coast where it is beautiful, or grand, or varied, you can indeed view it in different aspects, and under various circumstances ; but when you have exhausted the points of view, and have gazed on the scene in the diverse light of morning, noon, and evening, in sunshine and in cloudy weather, in the sleepy calm and in the magnificence of the tempest, you have pretty well run your pleasure out, and what remains but to do over again that which you have already done ? One cannot go on from day to day picking up pebbles and shells merely for their prettiness : walks on the cliff or on the strand become wearisome when there is nothing to walk for ; even the feeling of rest that was so delicious at first—the relief from habitual care and labour—soon grows irksome ; the mind, habituated to activity, yearns after something to do ; and hence that which at first seemed so delightful soon satiates. When I see gentlemen at a beautiful marine village, lounging by the hour together in the news-room, and young ladies sitting about the rocks novel-reading, and others of both sexes wandering to and fro with listless and vacant countenances, I cannot help saying within myself, “ You have outstayed the pleasure for which you came here, and for any peculiar gratification which you get from the sea you might as well be back in the towns or cities whence you came.”

It is a painful feeling, this consciousness that the sources to which we have looked for gratification are dried up. The monarch of old, who offered a great reward to any one who should open up a new spring of pleasure, thought he had exhausted all that were already open ; but surely he was greatly mistaken. And so are those who, after a few weeks' idleness at the coast, rush back to town with the notion that they have worn out all that is to be enjoyed there.

But what if one could put you in the way of finding fresh objects of amusement every day ? What if I were to open up before you resources that you could never exhaust in the longest life ; a fund of intellectual delight that would never satiate ; pursuits so enchanting that the more you followed them the more single and ardent would be your love for them ; so excellent that they would elevate as well as entertain the mind ; that leave no moral or mental defilement ; that strengthen rather than enervate both mind and body ? Does such promise seem extravagant ? Believe me, it is no more than may be fulfilled. I am writing not from the report of others, not what I have read in musty books, but what I have felt and proved in many years' experience. The pursuits of which I speak have been my delight from early youth onward, and they have not abated one jot of their freshness ; nay, they are more enchanting than the first day I followed them.

“ O,” says an eloquent writer, “ if the runners after pleasure would but stoop down by the wayside, they might drink waters better than those which they taste only in their dreams. They will not be told that they have in their possession the golden key which they covet ; that the music which they look to entrance them is sleeping in their own untouched instruments ; that the lamp which they vainly ask from the enchanter is burning in their own bosoms.”

The whole difference between one who sees in the external world of Nature a paradise, and one to whom it is a barren desert, consists in *the open eye*. When once the attention has been awakened to the perception,

*in detail*, of the wonderful beauty and fitness, the endless variety of structure and form, the curious contrivances, relations, modifications, and compensations, that are manifested in God's marvellous works, a well of pleasure has been unsealed that is never closed again. It is as if a new face had been put on everything, whereas the change is only in the beholder; the beauty and variety were there before, but unnoticed:—

“A primrose by the river's brim,  
A yellow primrose was to him,  
And it was nothing more.”

My object is to become to my readers an humble guide to this fountain of delight. I would take you with me, gentle stranger, and ask your companionship in a few of those investigations which I find so fascinating that a summer's day is only too brief for their enjoyment. Let me lift the veil from some of those beings, of whose very existence you are probably unaware, and show you beauties that you have never suspected or imagined.

Do you happen to know Ilfracombe? It is a little quiet seaport in the north of Devon, rather out of the world in these railway days, and therefore less known than its attractions deserve. The coast, in common with nearly the whole of this side of the county, is rocky, and presents abundance of bold and magnificent scenery. The shore consists of bluff headlands and ragged points, alternating with little coves and beaches of sand or shingle (more generally the latter), and the recess of the tide exposes a multitude of black, bristling ledges and points of rock, that afford a peculiarly favourable field for such investigations as I am speaking of.

Into the little cavities and corners of these uncovered rocks, the holes, and angular basins, that remain full of water when the tide has receded from their level, I have been peeping and poking for the last three months, and I have found them an exhaustless mine of interest—a “digging” which I have worked with more contentment, and I am sure with less risk to soul and body, than if it had been one of those in California or Australia.

I dare say you have seen, if you have turned over with your foot the brown seaweeds that are thrown upon the beach, and have looked ever so cursorily at them, pieces of the smooth, leathery leaves, or of the thick, round stalks studded with small, irregular patches of greyish substance, that look as if bits of fine muslin or blonde had been gummed down on their surface. If you pass your finger over one of them you will find it rough to the feel, like a rasp, and if you try it with the edge of your nail you will perceive that it is of a shelly or stony hardness, notwithstanding its fragile delicacy of appearance.

Perhaps you will be surprised to learn that this thin crust is a living animal, or at least was such at one time. Come down to the tidepools at low-water mark, and we shall readily find examples in a living state. Standing on the rocks at the water's edge, when the tide is very far out, we see a forest of large, smooth, olive-coloured leaves waving and floating about, half out of water, their extremities cut into many long strips. This is the Sea-girdle or Tangle, one of the largest of British seaweeds. If we can get a sufficiently firm hold of one of these to pull it away from its attachment, we shall find its mass of branching roots incrusted and studded with many curious objects, among which, in all probability, we shall detect the fine, muslin-like network that we are seeking.

We break off a bit of the root, or what is better, shave off with a sharp

knife a thin slice, on which is the network, and drop it into a phial of sea-water, to carry home. Now then for the microscope; for we can do little in these interesting researches without that wonder-showing instrument. Let us examine it first with a low power; we should always use a low magnifying power first, to attain a general knowledge of the object we are studying, then proceed successively to higher powers in examining the details. A good pocket lens, one with three glasses sliding over each other, is very useful for this, and will display a multitude of objects to great advantage—it costs but a few shillings. A glance through such an implement will show you that our muslin-crust consists of a great number of short tubes or cells laid upon the seaweed in the most regular and orderly manner. They lie in succession, one following close on another; and these rows side by side, so that the middle of one cell is just opposite the end of its next neighbour. Each cell has a round orifice, as wide as its diameter, apparently open, and facing upwards as we look down on the surface of the whole network, so that it much resembles a number of shoes set very close together. Its appearance now is shown in the annexed figure.

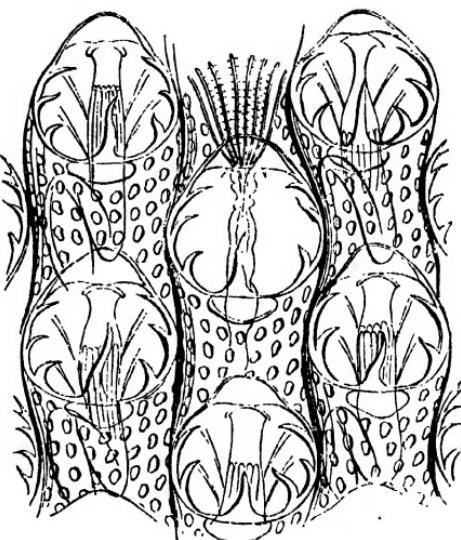


But in order to obtain a more perfect acquaintance with the nature and structure of this assemblage of cells, we must use a powerful microscope. Each cell is now seen to be composed of a very thin layer of stony substance, sufficiently transparent to reveal clearly the interior, though somewhat tinged with white. Its appearance much resembles a clear skin or *membrane*, from which, and from the numerous regular apertures resembling *pores*, this kind of crust has been named by naturalists, *Membranipora*. The transparent substance, however, is not quite uniform, for there are in it, arranged in rows, numerous oval spots, as transparent as the other part; which are not holes, but which I will compare to the bladders in the substance of bad glass. What the use of these specks is I cannot tell, and I believe no one else has yet been able to find out. The large orifice has a thickened rim running all round it, from which spring up about six slender spines which arch over a little, and one more at the lower side, commonly much longer than the rest. This is often so long as to resemble a bristle, and hence this particular species of *Membranipora* is distinguished as *pilosa*, that is, *hairy*.

But this slipper-like cell is only the house in which the animal dwells; to which it bears a relation somewhat like that of the shell to the snail, though not exactly the same. In the specimens that you pick up on the beach, you would find nothing else than this, if you examined ever so closely, but in our sample just taken out of its native water we shall be able to show much more. The broad orifice surrounded by spines is in life covered with a delicate elastic membrane, stretched across it like the head of a drum, and towards the front of this there is a slit with two lips in the form of a crescent. A case or tube of the thinnest possible skin passes from the lips of the slit through the middle of the cell, within which plays to-and-fro a polype, capable of protruding itself to a great extent, or of retracting far into the interior of its cell, just as it pleases. In the accompanying engraving, which represents about half-a-dozen cells in a vertical aspect, you may see the polype in both conditions. It is extended in the upper cell of the middle row, and contracted in various degrees in the others.

In the latter state the animal is bent upon itself with a double fold, like a

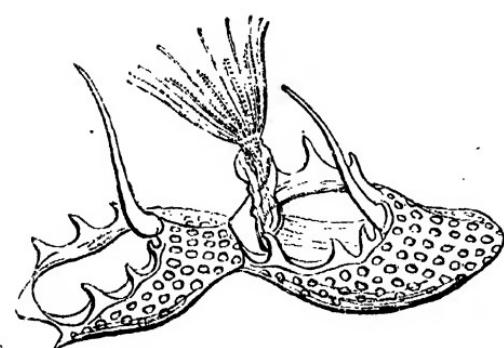
person lying in bed with his knees tucked up; but when it wishes to expand itself, the two pairs of muscles which are seen in the form of threads on each side, draw the body upwards, and the skin that envelops it turns inside out, just as we draw off a stocking. As it unfolds it gradually protrudes from the slit, and now displays a number of long threads, called tentacles or feelers, neatly packed side by side in a bundle; but when quite protruded, these suddenly expand into the shape of an elegant cup or bell. The animal is now very beautiful, being clear as spun glass; and its beauty is heightened by the sprightly motions



which it exhibits. Every one of the tentacles appears to have a double set of little black teeth, like the cogs of a watch-wheel, which run rapidly along in ceaseless course; those of one side of the tentacle running towards the tip, and those of the other side towards the base. This motion, which is so striking and beautiful that it is impossible to look at it without admiration, is not, however, a real progression of any parts; this is a deception of the sight. The tentacles are covered with very fine hairs called *cilia*, which are endowed with the property of moving in regular but very rapid waves, and it is these waves that run on and give the appearance of moving teeth. This sort of motion is eminently characteristic of these microscopic creatures. The object of the waves is to make a current in the water. As the animal is fixed on the seaweed, it has no means of searching for its food, or of pursuing it. But the action of the *cilia* is so arranged that it produces a constant whirlpool or circular current in the water, tending to the interior of the bell. This current extends for a long way from the animal, and any little floating particle of food, or any tiny vagrant animalcule coming near, is drawn in, and in spite of its efforts is gradually sucked into the bell of tentacles, and there whirled round, till at length it rushes into the open throat that gapes at the bottom. You may form a rough idea of this by observing a funnel in the bung-hole of a barrel. You pour the liquor into the funnel till it is full; and as it gradually runs out, the water whirls round more and more rapidly, bearing with it any floating matters, which presently are carried forcibly out at the tube; if you could look down into the polype's bell of tentacles, you would see just such a funnel, just such an orifice at the bottom, and just such a whirling sucking eddy within constantly maintained.

The little creature is very sensitive and timid; the slightest alarm, a tap upon the table, the jarring of a door in any part of the house, causes it, in the twinkling of an eye, to close up its tentacles into a straight bundle, and retreat down into the recesses of its stony cell. And here we see the use

of the elastic membrane that is stretched across the broad mouth of the orifice. If the walls were quite stiff and unyielding, there would be no room for the parts to be stowed away, the whole cavity being filled with the vital fluids ; but this membrane being yielding, is pressed outward as the animal withdraws, and becomes convex ; on the other hand it sinks and becomes concave when the creature is protruded. This will be better understood by the accompanying view of the cells as seen sidewise.

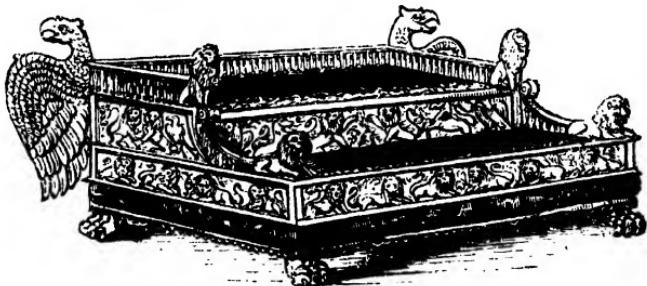


There is one other curious thing in the history of this tiny atom, that will perhaps surprise you more than anything else. It has not only an individual life, but a compound life. Every cell contains a perfect animal capable of performing all the functions of its being ; but every cell is connected with the one before and behind it by a slender hole ; and through this there passes a cord of vitality that links all the animals together in one common life. The Siamese twins were two persons monstrously united by a fleshy cord, which combined their separate lives into one. This mode of existence which excited so much wonder in their extraordinary and unnatural case, is, with the small animals of which I am speaking, the constant rule. No matter how numerous the assemblage of polypes may be, they are all animated by a common vitality, all bound in one bundle of life ; and thus they constitute a perfect commonwealth.

P. H. GOSSE.

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NINEVEH—THE COURT—(*continued*).



INDIAN FOOTSTOOL.

SOMETIMES the monarch sat in royal pomp on his throne of state, surrounded by his courtiers. The throne was an elegant stool without any back, the corners forming projecting rams' heads, the feet and bars elaborately carved ; the bottom apparently formed of cane split and interwoven, much as in our light chairs. From a sort of fringe represented

under the bottom, resembling the conventional form given to the hair or wool of animals, we incline to think that a covering or cushion of fur was spread upon the seat of the throne. The royal feet rested on a massive footstool, which had an elevated rim, and of which the feet were carved into lions' paws. This form of throne seems to have been connected with some religious ceremonies; for when the king sat on it he was clothed in a robe most richly embroidered with sacrificial and other religious scenes and emblems, and a priest was present in full sacerdotal costume, carrying the basket and elevating the pine-cone. At such a time the chief cup-bearer stood before his master, and presented to him a shallow bowl, which the king then held up in front of his face, higher than the level of his mouth, fixing his eyes upon the ministering priest. The cup-bearer meanwhile waved the fly-whisk over the bowl, and held in his left hand a sort of saucer or cup-stand, with a long bent handle terminating in a ram's head, to receive the bowl from the king when he should have done with it.

Behind the monarch, as usual, stood the Silikdar, like the cup-bearer, an eunuch; he carried the royal arms, the bow, quiver, and sword; and with one hand fanned the king with a fly-whisk, corresponding to that of his fellow-servant.

In the modern Persian Court, according to Sir H. Jones, "On state occasions, such as the audience of ambassadors, the shield, the mace, and the sword, are borne beside the takht or throne, on which the Shah sits, by three of the handsomest Georgian ghulams, whose dresses on this occasion glitter with gold and precious stones."

The form of the stool-throne was much like that of one still preserved with great care by the Persian monarch, and used only on the greatest occasions; perhaps itself a relic,—like St. Edward's chair on which our English sovereigns are crowned,—of very remote antiquity. Sir John Chardin saw it used at the coronation of Shah Soleiman III. in 1666, and thus describes it:—

"It was a little square cushion-stool, three feet in height; the feet of the pillars that supported the corners being fashioned like so many great apples; and to secure the seat, there ran as many cross-bars both above and below. The upper part was smooth and plain, without anything that might make the scat softer, being all the same materials with the rest, that is, massive gold very thick; the four pillars also and the feet being plated with gold, and set with little rubies and some emeralds. This same stool at other times is kept very clarify in the Treasury Royal, which is a dungeon in the fortress of Ispahan, and so weighty that two men can hardly carry it."

At other times the king sat on a throne of another form. It was a high elbow-chair with a tall straight back, closely resembling those we see in old-fashioned mansions. Over the top was always thrown a cloth with an embroidered border, which hung low down the back. A footstool supported his feet, which frequently had a high rim curving inwards, the use of which it is difficult to imagine, if it was really constructed as represented. But the rim was in all probability at the two sides, and only by the artist's ignorance of perspective placed at the back and front; that is, he has drawn it as if in transverse section. In the gorgeous Indian Tent in the Great Exhibition there was, in front of the carved ivory throne, a footstool of the same material, of two steps. The upper part on which the feet rested is margined on the back and the two sides, *but not in front*, by a

rim or wall of considerable height. It thus affords an interesting illustration of these Assyrian footstools.

When the sovereign occupied this throne he commonly held in his right hand the tall golden sceptre, the foot of which rested on the ground, while his left hand held a small fan of feathers, or a bunch of pomegranates, or was laid upon his knee. The vizier usually stood before his lord, face to face, to give him the aid of his counsel and experience; when speaking he seems to have lifted up his extended right hand, while the left rested on the hilt of the sword that he wore horizontally in his girdle. At other times etiquette prescribed the folding of the hands in the attitude already described. The king, when speaking, raised the right hand, and laid the left on his sword-hilt in like manner, but is never seen with folded hands.

The fly-flapper seems to have been indispensable, whenever the monarch was not in actual motion. The pertinacity of minute flies, and the torment they incessantly cause by their venomous punctures, in hot climates, is well known; when a person is in rapid motion, as on horseback or in a carriage, he can manage to evade their assaults tolerably well; but the instant he pauses, they throng around in humming swarms, and soon cover every exposed part of the person with their painful bites. It was, doubtless, as a protection against these formidable though tiny foes, that the fly-whisk was in such constant requisition. Very frequently two attendant eunuchs exercised this useful implement at once; they are sometimes represented as one before and one behind the king, and sometimes as both behind, and standing side by side, but we may be permitted to suppose that their common place was one on each side of their lord. The fly-flappers usually carried a handkerchief or napkin over the shoulder or hanging on the left arm, sometimes held forward in the hand ready for the royal demand, which in such a climate, we may suppose, was pretty constant.

Almost equally indispensable, beneath the torrid rays of the cloudless sun of Assyria, was the parasol; and accordingly we find such an implement carried by an eunuch over the head of the king, large and heavy, and requiring the support of both hands, but in general form closely resembling those used by ladies in modern times. Even when the monarch

sat on his throne within his royal halls it was beneath the grateful shadow of the parasol; a circumstance which singularly favours the conjecture of Mr. Layard that the Assyrian palaces were, at least in their central portions, roofless, and open to the sky.

When the king travelled he was always attended by a parasol-bearer in his chariot. In this case the instrument was generally of larger size, and sometimes the staff appears to have rested in a socket in the floor of the car, being held steady by the attendant. Sometimes it was rounded in shape, sometimes conical; the summit was usually adorned with an ornament, and depending tassels occasionally fringed the margin, ribs



CHARIOT PARASOL.

converged from the expanded arch to a socket around the staff, which from its appearance we conjecture to have been capable of sliding up and down, for the purpose of expanding or closing the parasol. In the latter period of Assyrian history, a long depending veil or strip of cloth descended from the hinder part of the margin, nearly to the feet, thus rendering the shadow more extensive.

In the Great Exhibition, there were specimens of royal parasols from India, the very counterparts of those of the Assyrian sculptures. The staff is sometimes of wood, painted, gilt, and varnished; sometimes of bamboo; sometimes of silver. The expansion is generally of silk, often fringed and embroidered with gold or silver.

The parasol appears continually in the Persian sculptures, of the same form as that used by the Assyrians, from whom the custom probably passed to their successors in empire.

The parasol at this day is one of the insignia of royalty in Persia. It is carried by an attendant behind the monarch's person, just as of old. None but the king or his sons are permitted to use it.

The cup-bearer in the ancient oriental courts was always a person of rank and importance; and from the confidential nature of his employment, and the opportunity it gave him of access to the royal ear, he must have possessed great influence. We learn from ancient writers that one part of the duty of the office was to introduce to the sovereign those who sought an interview on business, and to deny access to those whose admission he thought improper or unseasonable.

Nehemiah was cup-bearer at the same court in the time of Artaxerxes, who was appointed governor of the people of Israel, who had now returned from the Babylonish captivity.

The cup-bearers of King Solomon, and the magnificence of their apparel, are mentioned among the objects that especially attracted the admiration of the Queen of Sheba.

"And when the Queen of Sheba had seen the wisdom of Solomon, and the house that he had built, and the meat of his table, and the sitting of his servants, and the attendance of his ministers, and their apparel; his cupbearers also, and their apparel; and his ascent by which he went up into the house of the Lord; there was no more spirit in her." (2 Chron. ix. 3, 4;)

We may be sure that we see in the person depicted on these monuments a faithful original portrait of the style, dress, and appearance, if not of the person, of that arrogant officer who spake such great swelling words in the name of his master, Sennacherib, against the living God. (Isa. xxxvi.) For "Rab-shakeh" is not a proper name, but an appellative, or rather a substantive with a qualifying adjective, and, literally rendered, signifies "the chief cup-bearer." His being a eunuch was no objection to his fulfilling so belligerent a mission.

There is an observation in Xenophon which receives a curious illustration from the monuments of Assyria and Persia. He appears to have been struck with the polished, courtly manner in which the cup-bearers of the Median monarch performed their duty of presenting the wine to their lord. Having washed the cup in the king's presence, the wine was poured into it, and it was then handed to him, not grasped, but lightly resting on the tips of the fingers. Now it is natural to suppose that grace and elegance of manners were quite as much cultivated by the monarch himself, the standard and model of good-breeding, as by his courtiers and that his

reception of the cup would be marked by the same delicacy as their presentation of it. And this we see conspicuously portrayed in these original studies from the life. The Assyrian monarch elevates the bowl on his right hand, supported only by the tips of his fingers and thumb, exactly as described by the Greek.

The same grace marked all the actions of those about the court; it was evidently a scene of the most studied politeness. As it is a breach of oriental etiquette at this day to grasp with the hand anything presented to a superior, if it can possibly be carried otherwise, so it was in the ancient courts of Nineveh and Persepolis. Objects that could lie on the open palm of the hand were so carried, steadied by the other hand if there were but one article; if two, one supported by each extended palm. If the prehensile power of the fingers was needed, it was exercised with as little pressure or grasping as possible; the fingers remaining straight and the object held against them by the thumb. The golden sceptre was thus held by the king, at least in the early time when the Nimroud sculptures were executed; in those at Khorsabad the custom is less regarded.

The eunuch, whom we consider as representing the Kislar Aga, was doubtless the officer who, under the title of Rab-saris (literally the chief eunuch), was associated with the Rab-shakeh, or chief cup-bearer, in delivering Sennacherib's insulting message to Hezekiah, and who is mentioned among the chief princes of Nebuchadnezzar that were present at the capture and destruction of the city of Jerusalem. In the book of Daniel the same personage is called by the analogous titles of Rab-sarisiv (the chief of his, *i.e.* the king's, eunuchs), and Sarha-sarisim (the prince of the eunuchs): his name was Ashpenaz, and the amiability and excellence of his character we may infer from the "favour and tender love" with which he regarded the captive Daniel.

#### LETTING AND HIRING.

WHEN one man parts entirely with anything that belongs to him to another person, and receives payment for it, this transaction is called, as you know, selling and buying. When he parts with it for a time only, that is, lends it, to another, and receives payment for this, the transaction is commonly called letting and hiring.

But there are various words used to express this kind of dealing. When any one allows me, for a certain price, the use of his coach, ship, or horse, this price is called hire. And so also if he lets me himself, that is, his labour, to wait on me or work for me, I am said to hire him; and the payment he receives is sometimes called hire, though, more commonly, wages. But if, instead of a carriage or a horse, he lets me a house or a garden, the price I pay him is called rent. And if he allows me the use of his money, the price I pay for the loan of it is called interest. Now, though these different words are thus employed, you are not to suppose that they signify so many different kinds of transactions. If you consider attentively what is meant by the words Rent, Hire, and Interest, you will perceive that they all in reality signify the same sort of payment. It is only the fashion of the language to employ these different words according to the different kinds of articles that are lent.

The Israelites were forbidden, in the law of Moses, to lend to their brethren on usury, that is, interest. As they were not designed to be a trading people, but to live chiefly on the produce of their own land, they

were not likely to have any considerable money transactions together, and would seldom have occasion to borrow, except when one of them happened to fall into distress ; and then his brother Israelites were expected to assist him freely, out of brotherly kindness and friendship, as is becoming in members of the same family. For they were all descended from twelve brothers, the sons of Jacob, who was also called Israel, and from whom they took their name : and they were commanded to consider each other as brethren.

But they were allowed by God's law to receive interest on the loan of money, or of anything else lent to a stranger, that is, any one besides the Israelites. And this shows that there can be nothing wrong in receiving interest, or any other kind of hire ; for the law expressly charges them not to oppress or wrong the strangers, but to treat them not only justly, but kindly and charitably.

I have said that there is no real difference between paying for the loan of money, and the loan of anything else. For suppose I have 100*l.* lying by me, you will easily see that it comes to the same thing, whether I buy a house or a piece of land with the money, and let it to my neighbour at so much a-year, or whether I lend him the money to buy the house or the land for himself, on condition of his paying me so much a-year for the use of my money. But in the one case his yearly payment will be called rent, and in the other case it gets the name of interest.

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#### THE PROTEUS.



THE European Proteus (*Proteus anguinus*, LAUR.) is much like an eel with minute feet, and is one of the most interesting links in the chain of animated nature, connecting the Reptiles with the Fishes. The deep and dark subterranean lakes of Austria are the only locality in which this singular creature has yet been discovered. One of the most romantic and splendid caverns in Europe is the Grotto of the Magdalene, near Adelsburg, in the duchy of Carniola. The whole of that region consists of bold craggy rocks and mountains of limestone formation, perforated with spacious

branching caverns, in whose awful recesses sleep the sluggish waters of vast subterranean lakes, whence many rivers take their origin. In these dreary reservoirs, over which a gleam of light has never played, save when the torch of the inquisitive traveller is flashed back from the unruffled surface, are found many Protei, swimming through the waters, or burrowing in the mud which is precipitated by them.

Nearly all that is known of these strange tenants of the bowels of the earth is comprised in the following extract from Sir Humphry Davy's "Consolations in Travel," where the appearance of the Protei is graphically described. In a conversation supposed to take place in the magnificent cavern above-named, *Eubathes*, one of the speakers, says, "I see three or four creatures, like slender-fish, moving on the mud below the water."

"*The Unknown*.—'I see them; they are the Protei; now I have them in my fishing-net, and now they are safe in the pitcher of water. At first view, you might suppose this animal to be a lizard, but it has the motions of a fish. Its head and the lowest part of its body and its tail bear a strong resemblance to those of the eel; but it has no fins, and its curious branchial organs are not like the gills of fishes; they form a singular vascular structure, as you see, almost like a crest, round the throat, which may be removed without occasioning the death of the animal, which is likewise furnished with lungs. With this double apparatus for supplying air to the blood, it can live either below or above the surface of the water. Its fore feet resemble hands, but they have only three claws or fingers, and are too feeble to be of use in grasping or supporting the weight of the animal; the hinder feet have only two claws or fingers, and in the larger specimens are found so imperfect as to be almost obliterated. It has small points in the place of eyes, as if to preserve the analogy of nature. It is of a fleshy whiteness and transparency in its natural state, but when exposed to light its skin gradually becomes darker, and at last gains an olive tint. Its nasal organs appear large; and it is abundantly furnished with teeth, from which it may be concluded that it is an animal of prey; yet in its confined state it has never been known to eat, and it has been kept alive for many years by occasionally changing the water in which it was placed.'

"*Eubathes*.—'Is this the only place in Carniola where these animals are found?'

"*The Unknown*.—'They were first discovered here by the late Baron Zoës; but they have since been found, though rarely, at Sittich, about thirty miles distant, thrown up by water from a subterraneous cavity; and I have lately heard it reported that some individuals of the same species have been recognised in the calcareous strata in Sicily.'

"*Eubathes*.—'This lake in which we have seen these animals is a very small one; do you suppose they are bred there?'

"*The Unknown*.—'Certainly not; in dry seasons they are seldom found here, but after great rains they are often abundant. I think it cannot be doubted that their natural residence is in an extensive subterranean lake, from which in great floods they sometimes are forced through the crevices of the rocks into this place, where they are found; and it does not appear to me impossible, when the peculiar nature of the country in which we are considered, that the same great cavity may furnish the individuals which have been found at Adelsburg and at Sittich.'

Observations on the living animal, as well as the study of its anatomy, render it certain that it is in a perfected condition, and not as has been supposed, the larva or tadpole of some large unknown Triton or Sal-

amander inhabiting those Tartarean recesses. It has been found of various sizes, from the thickness of a quill to that of a man's thumb, but the form of the respiratory organs has always been the same. Its whole comparative anatomy forbids the conclusion that the form in which we see it is that of a creature in a state of transition. Professor Wagner, who had an opportunity of dissecting a male and a female, immediately after death, observes (in some notes communicated to the Zoological Society, November 1837) that he has no doubt that the pulmonary sacs or vesicles really perform the function of lungs. Each lung contains a large artery and a still larger vein, which are connected together by means of large and numerous vessels. He found the ova in the female very beautifully developed; their structure, as well as that of the ovary, corresponding perfectly with that of the other naked *Amphibia*, especially the Triton. It is an animal in fact well calculated to exalt our views of the greatness of God, who is able to produce and perpetuate animal life, and doubtless enjoyment, in situations, which we should at first suppose to be barren wastes, incapable of sustaining organized existence. But it suggests curious speculations of the wonders that may exist in the bowels of our globe, of which man has as yet no knowledge.

The Proteus has been frequently brought alive to England; the observations which have been made on them in confinement, prove their extreme susceptibility to the presence of light, the stimulus of which seems painful to them. "We have always noticed," says Mr. Martin, "that they shrouded themselves in the darkest part of the vessel in which they were placed, when the covering was taken off in order to inspect them; and that they betrayed a sense of uneasiness by their actions, when exposed to the light of open day, creeping round the sides of the vessel, or under the shelter of any substance, which threw a partial shadow on the water. . . . Though these animals lived many months, and were healthy and vigorous, they were not supplied with any food, nor know we on what they subsist, though we have every reason to believe them carnivorous."\* A kindred animal, the Siren of North America (*Siren lacertina*), kept in captivity in the Gardens of the Zoological Society, was fed on earth-worms, of which it ate a dozen and a half every other day.

In June 1847, a living Proteus was exhibited to the Linnean Society, by a gentleman who had had it in his possession eighteen months. This individual had never been observed to eat.

Those specimens which have been preserved were at first of a very pale flesh colour, with pink branchial tufts; but after awhile the general hue became a light olive, and the tuft deepened into crimson.

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#### NATIVES OF AFRICA (*continued*).

IN following up the course of the Nile, we quit well-known tracks and enter upon an "unknown country." An adventurous German, named Werne, describes a voyage of some hundreds of miles up the White Nile. The account of his journey would make us little desirous to have been his companion. His sufferings and hardships were really dreadful. The heat, the vermin, the drunkenness and profligacy of the crew, the venomous insects, and various other annoyances, made his existence almost insupportable. Even the luxury of bathing was denied to him, on account of the crocodiles which infest the Nile. Notwithstanding the suffocating heat, it

\* "Pictorial Museum," ii. 135.

was necessary during sleep to cover the face with the bed-clothes in order to escape the poisonous stings of insects. The poor German felt grateful to a cat, belonging to the captain, which used to sit on his shoulder and lick his face.

The remarkable exemption of England from the plague of insects should be a real cause of gratitude to us. Our moderate and healthful climate keeps a happy medium between the extremes of heat and cold which prevail in other latitudes. Mr. Werne reports, that the banks of the Nile are densely populated, but that the natives are very low in the scale of humanity. Their houses (if houses they can be called) are thatched huts, resembling beehives, and have a very small opening, through which the savage crawls in and out. These tribes carry on frequent warfare, and sell their prisoners as slaves.

The statistics of heathen lands bring us perpetually to the conclusion that the Gospel is the humaniser and softener of men, even of those who do not personally yield to its divine authority. The natives of Africa exemplify this; the depravity of morals and the barbarous cruelties of an unchristian population are exhibited not only on the Nile, but throughout every known portion of this continent.

Mr. Werne's life was in continual jeopardy, owing to the fanatic zeal against Christians, which the more strict Mahomedans entertain. He displayed admirable firmness under many trying emergencies, and at length he fell a victim to the climate, and died of a fever contracted on this expedition.

Before we quit the Egyptians, it will be necessary to explain their ancient superstitions, which afford a clue to their vestiges of art. It was their belief, that 3,000 years after the death of a man, his spirit would return to earth, to seek again the body which it had once animated. If the body were still existing, they would unite in a perpetual bliss; were it, however, perished, the spirit would remain in eternal unrest. Hence the care to embalm rich and poor: their kings rested in pyramids or in vast subterranean tombs, their nobles in sarcophagi, their poor in catacombs. For these burials spices were brought down by the Ishmaelites, and precious gums were important articles of merchandise. Large mummy-pits have been explored; the chambers of the pyramids have been robbed of their ashes, and the remains of the dead too often wantonly disturbed. A writer, who has travelled far in Egypt, related to me, that, on one occasion, the Arab, in whose tent he had taken a night's shelter, sent his son to fetch fuel for the fire. The boy returned, dragging a mummy, which he broke into fragments, and threw the arms, legs, and carcase into the flames. In consequence of the bitumen used in embalming the dead, this strange fuel produced a bright blaze.

A clue to various ancient customs has been gathered from the mummies. It was not unusual to swathe up with the body articles of food, models and implements. It is said there is now grown in England corn, raised from seed found in the winding-sheet of a mummy. In the Museum at Berlin, amongst many other Egyptian curiosities, there is the model of a ship, probably a resemblance to those in common use, which was found in a mummy case. The different benches of rowers are marked out, and light is thrown upon the construction of the ancient galley, which is so frequently alluded to in classical writers.

Various mummies may be seen in the British Museum, and will well repay the trouble of inspecting them. A ship, containing a similar spe-

cimen, was once wrecked off Jutland, and the mummy floated ashore, to the consternation of the natives of a fishing village, who, after much debate, gave it a Christian burial.

We now pass to the Moors of the North Coast of Africa. In the days of the Cæsars, the African provinces were intimately connected with the Italian Republics. The sieges of Carthage and Utica were prominent features in Roman history. The civilization, arts, and vices of Greece and Rome crossed the Mediterranean to the Libyan Coast. At a later period, the Church in the North of Africa was presided over at one time by five hundred bishops, pre-eminent among whom were St. Augustine and St. Cyprian, who ruled the sees of Hippo and Carthage. The learned Tertullian, also, was an African presbyter. Instances of the piety of the African clergy are handed down to us : some sold their goods and gave all they possessed to the poor ; others became martyrs during the persecution of Decius (of these the foremost was the bishop) ; others, during a fatal pestilence, risked their lives in tending the sick and dying. The north of Africa has since lapsed into Mahommedanism. The Gospel has given way to the Koran, and the Cross to the Crescent. The corruption of morals accounts for this apostacy. Salvian, an early writer, says of the Africans, — “ Of the cruel, they are the most cruel ; of the drunken, they are the most drunken ; of the false, they are the most false.”

Little good can be said of the Moors of the present day. They have not even the usual virtue of the savage, “ hospitality ;” this quality is, in them, usually overborne by the fanatic hatred of Christians. The vengeance of European States has been roused at various periods by the piracies of the Moors. Christian slaves were liberated during the middle ages either by force of arms, or by ransom, and many bishops set apart a portion of their revenues to redeem Christian captives. Great monarchs, such as the Emperor Charles V. and Francis King of France, engaged in war with the pirates of Barbary, and Algiers was bombarded during our lifetime by an English fleet under Lord Exmouth. Once, while on board ship on the coast of Africa, the author saw a fleet of Algerine galleys sail out of a small harbour : they were sufficiently near to allow us to observe the swarthy features of the crews, who looked fierce and cruel. Since that time Algeria has become a province of France, after being the scene of a long and merciless war.

The country of the Moors is still liable to be laid waste by locusts, which fly in such large swarms, as to appear like a black cloud. Where they alight, every blade of grass, and every green thing, is speedily devoured. The visitation of Pharaoh is often renewed in this terrible plague. Very trying is also the hot wind from the Desert, called the Simoom. The power of this fiery blast may in some degree be conceived from the fact that, while our vessel held its course fully ten miles from the African shore, we were oppressed by a feeling of suffocation, as if we were standing at the mouth of an oven. When a caravan is overtaken in the Desert by the south-east wind, the results are terrific. The loose fine sand is driven by the tempest in moving columns, and overwhelms the camels and their drivers. It is on record that, on one occasion, out of four thousand camels, which formed a caravan, eighteen only were left alive.

We hear much of the fertility of Barbary : by a happy disposition of Providence, luxurious fruits frequently abound in those countries where the heat of the climate makes such refreshment peculiarly grateful. This is the land of the orange and pomegranate, the fig and the date, which

form the principal articles of food to the abstemious followers of the Prophet.

The Moors are a picturesque-looking people. "We often remarked and admired them in the markets of Gibraltar, whither they bring their produce across the Straits, and carry on a trade with the English garrison and the other inhabitants of the Rock."

If we refer to the Travels of Mungo Park, we shall gather a very unfavourable opinion of the Moors. In almost every Moorish town, our adventurous countryman was ill treated, robbed, insulted, and at length he was treacherously murdered. Their contempt of our faith is so rooted, that sometimes he was fain to drink water out of a trough along with the cattle, since no Moor would suffer his water vessel to be polluted by the touch of a Christian. Morocco, Fez, and Tangier, are among the principal Moorish cities.

A sandy desert, more than a thousand miles broad, cuts off the Negro kingdoms from the Moorish territory. This great natural boundary has been a barrier against intercourse with the interior. The customs, civilization, and religion of the maritime nations on the Mediterranean have not penetrated to Nigritia.\* The inhabitants are called "Negroes," and are the next class of the "Natives of Africa" to be described.

The physical peculiarities of this race are, the dark skin, the thick lip, the woolly hair, and the flat nose. Their disposition is docile, and they are by no means deficient in intelligence. The Negro scholars in West Indian schools fully equal (as we learn from those who are competent judges) their companions of European blood in attention and proficiency. This race are principally known as slaves; and they are brought into contact with the whites through the nefarious traffic established on the western coast of Africa. The slave states of the United states of North America contain a large coloured population, who are chiefly the descendants of Africans. In the cotton plantations in Tennessee and Kentucky, large gangs of Negroes are engaged in picking cotton: they are a light-hearted race, and seemed to be happy. They feel the degradation of servitude far less keenly than we should do, since in their native land the whole population are slaves of their respective chiefs.

Still we must hope, that the American people, whose boast is their freedom, will grant at length emancipation to the blacks, a measure contemplated when the independence of the Republic was first proclaimed, but which was hindered from passing into law by the opposition of the influential planters of the Union.

The Negro has a very imitative mind, and it is said by those who are well acquainted with the West Indies, that the slaves have acquired under their different owners the peculiar national tastes of the people they serve. For instance, in the French islands, the Negroes ape the French in their liveliness and love of dancing, while the Spaniard's Negro is solemn and stately like his proprietor. The same remark holds good in the British, Dutch, and Danish plantations.

In a threefold light, the slave trade is attended with great horrors.

\* Nigritia, or Negroland, is a large country in the interior of Africa, reaching eastward to Nubia and Abyssinia, and bounded on the south by Guinea and other countries unknown to Europeans. The river Niger flows through some portions of it. This is the land of gold-dust and ivory, which are bartered for weapons, manufactures, and salt. This last essential article, it is said, is not produced in these portions of Africa.

The prophetic curse of Noah is realized with fearful accuracy. "God shall enlarge Japheth, and Canaan shall be his servant" (*i.e.* slave). This traffic demoralizes all who are in contact with it—the American planters who buy the slaves—the merchants who carry them across the Atlantic and sell them—and, not less, the native tribes, who wage wars in order to make prisoners, whom they barter with *Christian* slave-dealers for money, trinkets, or rum.

It is to be feared that great cruelties are inflicted on the slaves by their task-masters in the Brazils and Cuba. It is said, that it is found to answer to exhaust the slave by excessive labour, and to replace his loss by fresh importations. This statement, if accurate, destroys the argument often put forward, that no man would injure his own property. Many of the slaves die during the "middle passage," as the transit of the Atlantic is termed. In order to evade the British cruisers, the slave ships are so constructed as to sail with great rapidity. In these vessels the space is very limited, and the slaves are frequently packed in so dense a mass, that they are debarred from any change of position during the voyage. Should a tempest overtake the slaver, the port holes and hatchways are closed, and many perish through suffocation; or, should a vessel of war give chase and gain ground, the slaves on board are sometimes remorselessly thrown into the sea, that the ship may avoid detection and seizure.

The effects of this traffic on the native Africans are still more melancholy, since it is the cause of a perpetual warfare, which is carried on with singular treachery and cruelty. The larger kingdoms, such as Dahomey and Ashantee, organize periodical slave-hunts against their weaker neighbours. Their armies march by stealth to the devoted towns, attack them at dead of night, and set them on fire. The aged people are usually murdered, and the younger are hurried down to the coast, and sold to slave-merchants. The strangest circumstance of these forays is, that the King of Dahomey has a separate army composed of about five thousand women, who are said to be braver soldiers than the men, but infinitely more cruel and relentless. The king's wives are the officers of this army of Amazons. A Scotchman, who had served in the British army, was present when the King of Dahomey reviewed his female troops. The details are remarkable, "First, the whole regiment sing a song in compliment to the King." "Then the whole of the forces kneel down, and with both hands scrape up the dust and cover themselves with it;" suddenly they rise up, throwing the musket sharply into one hand, at the same time giving a hurrah. The whole then shoulder muskets, and run off at full speed." Other female regiments succeeded, and their drums were adorned with the skulls of traitors. Their prowess was shown by a sham attack, in which they had to penetrate through a pile of the most prickly briars and thorns, seventy feet broad and eight feet high, behind which was a palisade seven feet in height. Although lightly clad and without shoes, they rushed at the pile at the given signal, and in less than one minute they had taken the supposed town. The traveller, when questioned by the King, could not but acknowledge that his countrywomen were unable to perform this feat. These details of Mr. Duncan, to whose volumes we feel indebted for much information, are fully borne out by the statements of Commander Forbes, R.N., who adds some revolting details of human sacrifices offered up by the Dahomans at their great festivals. "The power of Satan" over the heathen is further displayed in the superstitions of the Fetish. This is a very degrading idolatry—a worship of demons and snakes, accompanied

with absurd mummeries and disgusting intoxication. This paganism still maintains a strong hold over the minds of the natives; few will dare to offend their Fetishman or priest.

Add to these superstitions almost every vice which can disgrace our nature; cruelty, lying, treachery, sensuality, &c., &c., and you will have a picture of what the Africans of the Slave Coast (with some few bright exceptions) are at this very time.

Earnest measures are, however, in progress, to evangelize this degraded people, and these Missionary efforts originate in a quarter where their wrongs have been great. The church in the West Indies feels the debt due to the Africans, and is now bent upon sending back to Africa, as Missionaries, the descendants of those who were brought thence as slaves. The Reverend Principal of Codrington College has put forth a statement of the practicability of founding in Africa a Mission on a large scale, comprising some English clergy, on whom it would devolve to superintend the work. Under their charge would be a band of native clergy, catechists and schoolmasters, besides artisans skilled in all manner of handicraft. It would seem that the time is propitious for such an effort, since the English power is respected on the Slave Coast, and Europeans are welcomed by the King of Dahomey. The native superstitions teach that the white man's religion is the true one, and hence there are less obstacles to the conversion of these kingdoms than in those countries where the Mahommedan faith prevails. The extreme desire of the Africans in the West Indies to return to their native land is another favourable circumstance: even those born in slavery cling to Africa as their home. It has been ascertained that, although many dialects are in use in the West of Africa, still there is one language which prevails over a large extent of country: measures are in progress to teach this native tongue in a department of Codrington College, which will be endowed for the express purpose of "African Missions." As the needful funds are not yet collected for this important enterprise of the Church, it is hoped that contributions will be sent for this special purpose to the Society for the Propagation of the Gospel.

Mr. Duncan's account of the etiquette at the court of Dahomey is original and interesting. While the king reclined in his palace in the presence of his people, his mother, aged eighty, knelt before him, and covered her grey hair with dust. She was then joined by the king's grandmother, who was upwards of one hundred years of age, and the two danced before him. Subsequently, the author, Mr. Duncan, was invited, as a mark of high honour, to dance with the king, and to play the Jew's harp at the same time.

English ships keep a strict watch on this coast, to intercept and seize Spanish and Portuguese slavers. A large number have been captured by the British fleet, and their living cargoes set free at Sierra Leone. Few places have been more deadly to Europeans than Sierra Leone: it has been the grave of missionaries, and our institutions there are kept up only by the sacrifice of many valuable lives. The record of the Niger expedition is one of the most fatal in the annals of enterprise. The climate of that river is so pestilential to Europeans that, of the crews who sailed up in it in 1841 very few survived. Their course lay through a vast forest, thickly peopled with savage tribes. It was projected to found a model farm and a mission-station; but this was rendered impossible by the mortality among the whites. These casualties show the wisdom of the schemes now maturing at Barbados, in pursuance of which Africans will bear the principal part in reclaiming and instructing their heathen fellow-countrymen.

Amongst the peculiarities of natural history on the Guinea Coast are the winged ants, which emit, in self-defence, such an insufferable smell that other insects are poisoned by it, and dogs will run howling away. Here is found the patakoo, or hyæna, a formidable beast of prey, which has sufficient strength to drag the carcase of a horse to a considerable distance.

## WILD FLOWERS.



FINE-LEAVED HEATH. (*Erica cinerea.*)

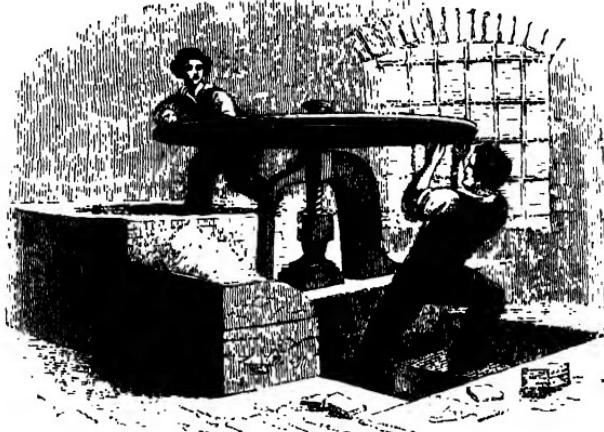
THERE are five species of Heath, which, with the common Ling of our heathy and moory lands, are included in the general name of Heather. The species figured on our page is, with the exception of the Ling, the most common of them all, though the delicate rose-coloured flowers of the cross-leaved Heath (*Erica tetralix*) are, on many wide-spread lands, as abundant as this. The last-named flower is the badge of the Macdonalds, while the species here represented is that of the Clan Macalister. Then there is a heath which is rare, but which has been found on the boggy lands of Connemara in Ireland, covering a space of at least two acres of land, and has been called Mediterranean Heath. The two remaining native kinds are found in some places in Cornwall.

The Heaths, whether found on the sandy wilds of Africa, whence we have most of our hothouse species, or on the bleak hills of the "Land of brown heath," always indicate a barren soil. Linnæus observes, in his *Flora Lapponica*, that in some of the districts through which he passed, scarcely any plant could be seen but heath, which covered the ground so that it could not be extirpated. He remarks, that the country people had an idea that there were two plants which would finally overspread and destroy the whole earth, these were Heath and Tobacco.

The heather is valuable, not to the bee only, which gathers stores of honey from its bells, but to many a bright-winged or darker-tinted insect, which finds food and shelter among its flowers and foliage. No cattle seem fond of it; but the fibres of the stalks are twisted into ropes, cottages are thatched with its branches, and the people of Jura and Isla brew very good beer by mixing the young heath-tops with their malt. Large quantities are gathered by the peasants for their winter fuel, and this plant and the "Bonnie Broom" are often strewed for an humble couch. In Rum, Skye, and Long Island, leather is tanned with a preparation of its branches, and in most of the Western Isles it is used for dying yarn of a yellow colour.

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#### THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.



•TILE PRESS.

#### ENCAUSTIC TILES.

THE revived taste for decoration with encaustic tiles has led to the invention of a number of ingenious processes for the production of these articles, with a facility and beauty of effect which were not capable of being attained by the ancient method. In comparing the old with the modern productions, it may perhaps be said that the former as much excelled the latter in beauty and variety of design, as the latter surpass the former in facility of production and excellent workmanship.

The following account of this branch of manufacture was obtained during a visit to the extensive tile and mosaic works of Messrs. Minton, of Stoke-upon-Trent.

Encaustic tiles consist of a thickness of red clay, with a facing of a

finer clay, which bears the coloured ornament or device. The bottom of each tile is also covered with a thin layer of clay, different from the body, in order to prevent warping during the drying and baking.

The body of the tile is formed of red clay or marl, obtained from Cobshurst, about four miles from Stoke. When dug out, it is left exposed to the air for about seven months. This is called *weathering* or *wintering*.

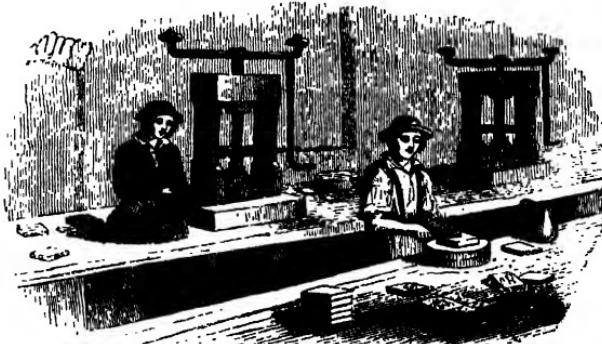
When brought into the factory, it is thrown into a tank and worked about in water, with a blunger. When divided to a certain extent, it is ladled into another tank, and blunged; this operation is repeated a third time. It is then passed through sieves of various degrees of fineness, mixed with various compositions, and is then either dried into hard lumps and ground into powder at the mill,

or evaporated at the slip kiln, according to one of two methods by which it is intended to be formed into tiles.

By Mr. Prosser's patent, the powder, as it comes from the mill, is placed on slabs of plaster of Paris, slightly damped. It is then sifted through fine sieves, and, when subjected to intense pressure, the particles of the powder will unite into firm, solid slabs or tiles. At the lower extremity of the screw of the press is fixed a steel plate, of the size and pattern of the intended tile; this fits into a steel box of the same dimensions, the bottom surface of which is ribbed, and this, by impressing ribs upon the under surface of the tile, enables it to adhere more strongly to the mortar or cement in laying down the tiles for a pavement, or for covering a wall. A quantity of the powder being swept into this metal box, the steel plate is forced down upon it. In a large press, such as that shown in the figure, the force exerted is equal to about four hundred tons; and a thickness of three inches of powder is compressed into a tile one inch thick, with sharp edges and a beautiful polished surface. Tiles of various sizes and shapes are thus produced, the largest of which present a surface of forty-two inches by nine inches; also such articles as tops for tables, eighteen inches in diameter, scale-plates for pork and butter-shops, twelve inches in diameter and upwards. Small ornamental buttons and shirt-studs are made in a similar way at smaller presses; also tesserae, for mosaic work of various shapes, colours, and sizes,

forming, when put together, all the beautiful devices of which mosaic work is capable. When, however, the size of a tessera exceeds one and a half inches square, it becomes a tile. When these various articles leave the press, they are put into a hot room for a week or two, and are then ornamented, glazed, and fired.

Such is the method of forming what are called *dry tiles*. Encaustic tiles are formed from the clay after it has been evaporated in the slip kiln. It is wedged and slapped to get out the air, and then slapped into a block, of the form of a cube, or parallelopiped, and placed before the tile-maker, who cuts off and removes a square slab, by passing a wire through it; upon this, the facing of finer clay, coloured so as to form the *ground* of the tile, is batted out, and slapped down; it is then turned over, and a facing is applied to the bottom of the tile to prevent warping; the tile thus formed is next covered with a piece of felt, and put into a box-press: a plaster of Paris slab, containing the pattern in relief, is then brought down upon the face of the tile, and impresses in the soft clay, or ground of the tile, the design which is afterwards to be filled up with clay of another colour. When the tile is removed from the press, the name of the maker is stamped on the back, together with a number of holes to make the mortar adhere. The filling up of the device is next performed in an ingenious manner. A quantity of slip or clay, in a semi-fluid state, is poured over the tile so as completely to conceal its surface;

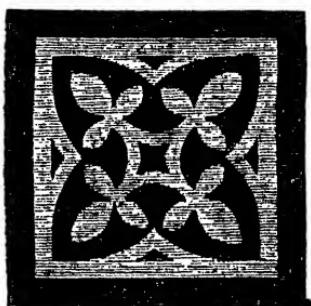


PRESSING AND SCRAPING TILES.



this is spread over with a knife, and then left for twenty-four hours, when the slip becomes tolerably hard. The tile is then placed on a small whirler, and the pattern and the ground are brought out by scraping away the superfluous clay, and leaving it only

in the depression caused by the pattern mould. The whole is, lastly, made smooth, and polished with a knife, and any little defects corrected ; the edges are squared and their sharpness rounded off with sand paper ; the tiles are then ready for the *greenhouse*, where they are arranged on shelves, and kept at a moderate heat for about seven days. After this period, the tiles are further dried in a *hot-house*, at a good strong heat ; they are then arranged in seggars, and fired as in baking pottery and porcelain, only about double the time is required for the purpose. The oven is left to cool gradually during about six days, and the tiles are then drawn in their finished state. These tiles contract in firing, about one-eighth of an inch in every inch. The dry tiles contract about one-sixteenth of an inch.



YELLOW ORNAMENT ON BLUE GROUND.



WHITE ORNAMENT ON BLACK GROUND.

### LINES

Said to be written by the PRINCESS AMELIA, youngest child of GEORGE THE THIRD.

UNTHINKING, idle, wild, and young,  
I laughed, and talked, and danced, and sung ;  
And proud of health, of freedom vain,  
Dreamed not of sorrow, care, or pain.  
Concluding in those hours of glee,  
That all the world was made for me.

But when the days of trial came,  
When sickness shook this trembling frame  
When folly's gay pursuits were o'er,  
And I could dance and sing no more,  
It then occurred how sad 'twould be  
Were this world *only* made for me !

THE  
**HOME FRIEND;**

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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WONDERFUL ESCAPE OF A HUNTER FROM THE  
BLACK-FEET INDIANS.



NORTH AMERICAN INDIAN.

In the remote parts of North America, though the British carry on a lucrative trade for the fine warm furs with which the quadrupeds in these cold countries are covered by the care of Providence, the wild and savage manners of the natives render it extremely dangerous for an European, employed there as a hunter, to separate himself from his company, as he is not likely to receive any mercy, should he come across a party of hostile Indians. The following is an account of the wonderful escape of a hunter, named Thomas Colter, who saved his life by his intrepidity and presence of mind, as related by Mr. Bradberry, in his travels through

North America. This man came to St. Louis, in May 1810, in a small canoe, from the head waters of the Missouri, a distance of 3000 miles, which he traversed in thirty days. I saw him on his arrival there, and received from him an account of his adventures, after he had separated from Lewis and Clark's party. One of these, from its singularity, I shall relate.—On the arrival of the party at the head waters of the Missouri, Colter, observing the appearance of abundance of beavers being there, got permission to remain and hunt for some time, which he did in company with a man of the name of Dixon, who had traversed the immense tract of country from St. Louis to the head waters of the Missouri, alone. Soon after he separated from Dixon, and *trapped* in company with a hunter named Potts: and, aware of the hostility of the Black-feet Indians, one of whom had been killed by Lewis, they set their traps at night, and took them up early in the morning, remaining concealed during the day. They were examining their traps early one morning, in a creek about six miles from that branch of the Missouri called Jefferson's Fork, and were ascending in a canoe, when they suddenly heard a great noise, resembling the trampling of animals; but they could not ascertain the fact, as the high perpendicular banks on each side of the river impeded their view. Colter immediately pronounced it to be occasioned by Indians, and advised an instant retreat, but was accused of cowardice by Potts, who insisted that the noise was caused by buffaloes, and they proceeded on. In a few minutes afterwards their doubts were removed, by a party of Indians making their appearance on both sides of the creek, to the amount of five or six hundred, who beckoned them to come ashore. As retreat was now impossible, Colter turned the head of the canoe to the shore; and at the moment of its touching, an Indian seized the rifle belonging to Potts; but Colter, who was a remarkably strong man, immediately retook it, and handed it to Potts, who remained in the canoe, and on receiving it, pushed off into the river. He had scarcely quitted the shore, when an arrow was shot at him, and he cried out, "*Colter, I am wounded.*" Colter remonstrated with him on the folly of attempting to escape, and urged him to come ashore. Instead of complying, he instantly levelled his rifle at an Indian, and shot him dead on the spot. This conduct, situated as he was, may appear to have been an act of madness; but it was doubtless the effect of sudden, and, as he thought it, sound reasoning; for, if taken alive, he must have expected to be tortured to death, according to their custom. He was instantly pierced with arrows so numerous, that, to use the language of Colter, "he was made a riddle of." They now seized Colter, stripped him entirely naked, and began to consult on the manner in which he should be put to death. They were first inclined to set him up as a mark to shoot at; but the chief interfered, and seizing him by the shoulder, asked him if he could run fast? Colter, who had been some time amongst the Kee-kat-sa, or Crow Indians, had, to a considerable degree, acquired the Black-feet language, and was also well acquainted with Indian customs; he knew that he had now to run for his life, with the dreadful odds of five or six hundred against him, and those armed Indians; he therefore replied, that he was a very bad runner, although he was considered by the hunters as remarkably swift. The chief now commanded the party to remain stationary, and let Colter out on the prairie three or four hundred yards, and released him, bidding him to save himself if he could. At that instant the horrid war whoop sounded in the ears of poor Colter, who urged with the hope of preserving life, ran with a speed at which he was himself surprised.

He proceeded towards the Jefferson Fork, having to traverse a plain six miles in breadth, abounding with the prickly pear, on which he was every instant treading with his naked feet. He ran nearly half way across the plain before he ventured to look over his shoulder, when he perceived that the Indians were very much scattered, and that he had gained ground to a considerable distance from the main body; but one Indian, who carried a spear, was much before all the rest, and not more than a hundred yards from him. A faint gleam of hope now cheered the heart of Colter: he derived confidence from the belief that escape was within the bounds of possibility, but that confidence was near being fatal to him, for he exerted himself to such a degree, that the blood gushed from his nostrils, and soon almost covered the fore part of his body. He had now arrived within a mile of the river, when he distinctly heard the appalling sound of footsteps behind him, and every instant expected to feel the spear of his pursuer. Again he turned his head, and saw the savage not twenty yards from him. Determined, if possible, to avoid the expected blow he suddenly stopped, turned round, and spread out his arms. The Indian surprised by the suddenness of the action, and perhaps at the bloody appearance of Colter, also attempted to stop, but, exhausted with running, he fell whilst endeavouring to throw his spear, which stuck in the ground and broke in his hand. Colter instantly snatched up the pointed part, with which he pinned him to the earth, and then continued his flight. The foremost of the Indians on arriving at the place stopped till others came up to join them, when they set up a hideous yell. Every moment of this time was improved by Colter, who, although fainting and exhausted, succeeded in gaining the skirting of the cotton-wood trees on the borders of the fork, through which he ran, and plunged into the river. Fortunately for him, a little below this place there was an island, against the upper point of which a raft of drift timber had lodged: he dived under the raft, and, after several efforts, got his head above water, amongst the trunks of trees, covered over with smaller wood to the depth of several feet. Scarcely had he secured himself when the Indians arrived on the river, screeching and yelling in the most appalling manner. They were frequently on the raft during the day, and were seen through the chinks by Colter, who was congratulating himself on his escape until the idea rose that they might set the raft on fire. In horrible suspense he remained until night, when hearing no more of the Indians, he dived from under the raft, and swam silently down the river to a considerable distance, when he landed and travelled all night. Although happy in having escaped from the Indians, his situation was still dreadful: he was completely naked, under a burning sun; the soles of his feet were entirely filled with the thorns of the prickly pear; he was hungry, and had no means of killing game, although he saw abundance around him, and was at least seven days' journey from Lisa's Fort, on the Bighorn branch of the Roche Jaune river.—These are circumstances under which almost any man but an American hunter would have despaired. He arrived at the fort in seven days, having subsisted on a root much esteemed by the Indians of the Missouri, and now well known by naturalists.

## NINEVEH—MANNERS AND FURNITURE.

A SERIES of bas-reliefs, discovered in one of the halls at Khorsabad, affords us some interesting light on the etiquette, manners, and furniture of the Assyrian Court. We conjecture that the artist intended to represent the preparations made for the monarch about to set out on a journey; or else the change of the royal residence from one palace to another, and the conveyance of the furniture needful for his convenience or pleasure.

The scene commences with king Shalmaneser and his prime minister engaged in conference. The monarch stands with the golden sceptre in his right hand, his left resting on his sword-hilt. The vizier stands before him in a similar attitude, but apparently speaking, his right hand being open and elevated. It is observable that in consonance with the principle already mentioned, both the king and his servant so lay their hands on their swords, as to touch them with only the tips of the bent fingers and thumb.

Behind the king the fly-flapper, an eunuch, wields his implement over his royal master's head, and carries in his left hand the long narrow handkerchief. He is followed by the armour-bearer, another eunuch, carrying in one hand a mace, hereafter to be described; the other hand elevated, but closed. At his back hangs the bow, strung and ready for use, and a broad belt passes obliquely round his body from the breast to the loins, suspended by straps that pass through rings in the belt, and over the shoulders; to this is attached, in a manner not very easily understood, the quiver. This personage terminates the line in that direction.



FLY-FLAPPER AND ARMOUR-BEARER.

Behind the vizier stand three eunuchs with folded hands, two of whom carry swords passing horizontally through the girdle on the left side; the third, perhaps of inferior station, or confined to peaceful occupations, is unarmed.

Then follows an eunuch, wearing a sword, with a belt across his breast passing over the right shoulder, apparently formed of three rows of pearls, one on each edge, and the other in the middle of the ribbon; the central row varied by rosettes of pearls at regular intervals. It has a singularly beautiful appearance. This officer appears addressing the king; both his hands are open, the right held down before him, the left elevated behind, as if introducing his subordinates, or beckoning to them to advance.

Now come the various articles borne along in succession towards the monarch. An eunuch approaches the one last described, less richly adorned, wearing a sword in the girdle, but no ornamental belt; and his bracelets are plain rings of metal. He carries on each hand a hemispherical vase or bowl, which he supports on his finger-tips and thumb, elevated before him.

He is followed by another of like aspect carrying two cans or cups of curious form. They are much deeper than wide, nearly cylindrical, but broader at the bottom and at the lip than in the middle; the bottom is fashioned into a lion's face, and the margin is furnished with an eye or ring at two opposite points, from which passes over a looped handle of twisted

wire. The bearer elevates one of these, and holds the other down in front of him. M. Botta thinks that these vessels were really formed of the skin of a lion's head and neck, prepared as skin bottles are; and he thinks that the form, narrower in the middle than at either extremity, is that which a vase of flexible material would assume under the weight of the contained liquor. But surely he forgets that the weight of a vessel formed of a lion's head and neck, and filled with fluid, would be vastly too great to be carried by a man with one hand, elevated in the air before him: besides that the size of these bears about the same ratio to the bearer as one of our tankards. We see cups of exactly similar form, moreover, in the hands of persons seated at banquets in other bas-reliefs, where they are evidently used as drinking-cups. We conjecture that they were formed of some precious metal, and that the fashioning of the bottom into the head of a lion was arbitrary and merely ornamental. The form is exceedingly elegant, and worthy of imitation by our own artists.



ATTENDANTS WITH VASES.

Then come two eunuchs similarly attired to their predecessors, bearing between them on their shoulders an object of a highly interesting character. It is evidently the king's pleasure chair, in which he was wont to take the air, or perhaps to move in solemn procession through the streets of his capital. The chariot, in which the monarch proceeded to battle, or to the scarcely less severe discipline of hunting savage beasts, had no seat, and was but little fitted for comfort or parade. In the car before us, however, he could sit at ease.

It consisted of a high-backed elbow-chair placed on a pair of low wheels, with a long draught-pole, proceeding horizontally for a portion of its length, then bent suddenly upwards, and terminating in a richly carved and caparisoned horse's head. It carried a cross-bar at the neck, the two ends of which were fashioned into the heads of gazelles. As there is no appearance of yokes or means by which harness could be fastened to the pole or cross-bar, we conjecture that the carriage was drawn by men, two on each side of the pole, the bar pressing against their breasts. The lowness of the wheels, and the form of the pole, seem much more suitable to such a mode of draught than to that by horses.

The chair itself was very curious. The back and seat were both high, the former straight, with a long cloth hung over it; the elbow was smooth, rounded at the angle; the bar of which it was formed was supported by

three carved figures of men, bearded in the Assyrian fashion, and wearing the sacred horned-cap. On the lateral bar which connected the legs of the chair, itself elaborately carved, stood the figure of a horse handsomely appareled, with head and neck-furniture, in a bold walking attitude, his head projecting before the seat, and reaching a little higher than its level. The legs of the chair terminated in great reversed cones, truncate at the extremities, and carved all over in imitation of the scales of a pine-cone. The use of the pine-cone to form the feet of chairs, thrones, and tables, was very general, and originally the resemblance was exact, but conventional treatment gradually deviated from the natural model, so that we could scarcely have determined, in the present case, what was the object imitated, if examples had not been abundant



ROYAL PLEASURE-CHAIR.

in which the form and the scaling were more correct.

The general form and apparent use of this vehicle recal to mind the "chariot" (a word which occurs only this once) of King Solomon; which is supposed to have been a sort of moveable couch or palanquin, furnished with a canopy or "covering," which does not appear in the Assyrian representation.

"King Solomon made himself a chariot of the wood of Lebanon. He made the pillars thereof of silver, the bottom thereof of gold, the covering of it of purple, the midst thereof being paved with love, for the daughters of Jerusalem." (Cant. iii. 9, 10.)

Two other eunuchs now appear, wearing swords (of which the former are destitute), bearing in a similar manner the massive throne or chair, which was intended to remain stationary. In its general contour it resembles the former, without the wheels and pole; the back, from the seat upward, is formed by the figure of a man, with the right foot advanced, and wearing the sacred two-horned cap, crowned with a fleur-de-lis. The elbow is supported by four figures of men, similarly attired, but of small size, all looking the same way, whose heads touch the bar that forms the elbow. On the cross-bar connecting the legs of the chair stand two bearded figures wearing fillets or diadems around their brows, and facing each other. They support the seat, not with their heads but with their open hands elevated above their heads. Below this there is a second cross-bar, elaborately carved, beneath which the feet terminate in great pine-cones reversed.

This is much more massive in its proportions than the wheeled chair, and may be supposed to have been the throne (or perhaps one of the thrones) on which the king sat in the palace, when he received the homage of his courtiers and officers of state.

Two other eunuchs succeed, carrying a sort of table of equally stout and heavy proportions. The top is flat, but convex on the inferior surface; but it appears to be a table used in the ceremonial of fire-worship. It

was used also as a dinner-table in public banquets, and in private houses. The four legs are thick, square, unornamented, terminating in very large lions' paws, which again rest on a flat slab, supported by inverted pine-cones. A strong bar connects the two legs that are shown, above the lions' feet; and on this stand the figures of two men wearing the two-horned cap with a fleur-de-lis point, who support the table-body with their elevated hands, exactly as the two beneath the seat of the throne. An ornamented stem, fluted and surrounded at regular intervals with thickened rings of cone-scales, rises from the middle of the lower slab and supports the table-body in the centre. The servants carry this piece of furniture in a manner which indicates its great weight, grasping the bar in one hand, and supporting the top with the other.

Then come two grooms with the royal chariot, whose lightness is shown by the fact that they are able to bear it on their shoulders, without touching the ground with it, the one supporting it by the wheel, the other by the pole. At the fore-part of the pole there is a transverse bar with yokes for four horses abreast, two on each side of the pole. These men wear short tunics, with the legs bare; they are furnished with swords hung from breast-belts of pearls, exactly similar to that already described as worn by the introducing eunuch; these, however, are bearded men.

Another groom follows, leading the four horses abreast, richly caparisoned on the head, chest, and shoulders. A curious instance of conventionalism in art is furnished by this bas-relief, for whereas all the horses' heads are distinctly shown, one in advance of another, only one chest is represented, and only two sets of legs. This groom, like his predecessors that carry the chariot, is a bearded man; while all the other servants are eunuchs. There is a manifest propriety in this; the occupation of grooms, an out-door employment, being appropriate to men; the care of in-door furniture more suitable to eunuchs.

An eunuch then appears, bearing a single drinking cup of the lion's head form; and according to the etiquette before mentioned, holding it in the palm of his extended left hand, while he lightly steadies it with the fingers of his right.

This attendant is closely followed by two others, also eunuchs, carrying a massive double stool, as appears from its use in scenes appropriated to festivity. It is a simple slab resting on four legs, which are connected by



THRONE.



TABLE.

an ornamentally carved bar, and end in lions' feet : these rest on another slab, supported by inverted pine-cones at the corners. The angles of the upper slab or body of the table project in the form of lions' heads.



GROOMS WITH CHARIOT.

A stool, almost exactly similar, is borne after the preceding, differing from it by being very narrow in proportion to its height, as if viewed endwise. The corners do not project, nor are they carved into lions' heads.

Another eunuch, the last in the series, then appears, carrying on the tips of the fingers of both hands a single large globular vase, much resembling those in which gold-fishes are kept with us. Large vases of this form were set on tripod ring-stands ; they were possibly washing-bowls, perhaps used for the rinsing of the royal cup in the presence of the king before the

wine which he drank was poured into it, according to the custom at the court of ancient Persia.



STOOLS AND BOWL.

We have already observed that this procession probably represents the deportation of the royal baggage and furniture to accompany the monarch on some expedition. We know that the Asiatic kings never travelled without every convenience and accessory to luxury that they were accustomed to at home. Even their military expeditions were cheered (perhaps we might say, *encumbered*) by the presence of the harem. Xenophon assigns the reasons by which the barbarians were wont to defend the practice, but insinuates his own opinion that pleasure rather than reason was the true motive. "To this day all the inhabitants of Asia, in time of war, attend the service accompanied with what they value the most ; and say that they fight the better when the things that are most dear to them are present. For they say that they must of necessity defend these with zeal and ardour. Perhaps indeed it is so ; but perhaps they do it only to indulge their pleasure."

## LETTING AND HIRING.

SOME persons are apt to think that a high price of corn and other provisions is caused by high rents; but this is quite a mistake. It is not the high rent of land that causes the high price of corn; but, on the contrary, the high rent of land is the effect of the high price of the corn and other things produced by the land. It is plain that rents do not lessen the supply of corn, and the price of corn depends on the supply brought to market compared to the number of people who want to buy. Suppose all landlords were to agree to lower their rents one-half, the number of acres of land, and the quantity of corn raised, would remain the same, and so would the number of mouths that want corn. The farmer, therefore, would get the same price for his corn as he does now; the only difference would be, that he would be so much the richer, and the landlord so much the poorer: the labourers and the rest of the people would be no better off than before.

But some persons say, that if rents were lower, the farmers could afford to pay higher wages to their labourers; but those who talk so confound together a payment and a gift. Wages are a payment for the use of a man's labour for a certain time; and as long as the price of corn remains the same, the day's work of the thresher would not be worth more to the farmer who employs him, on account of the farmer's having become a richer man than formerly. No doubt, the richer any one is, the better he can afford to bestow a gift, if he is disposed to do so, either on his labourers or on the tradesmen he deals with, or on any of his neighbours. But a pair of shoes is not worth the more to him on account of his being rich; though he can afford, if he thinks fit, out of kindness and charity, to make the shoemaker a present of double the price of them; and so, also, a day's work in threshing or ploughing is not worth the more to him on account of his being richer, though he may choose to bestow a gift on the thresher or ploughman. It is plain, therefore, that making farmers richer and landlords poorer would make no change in what is paid as wages. The farmer would have more to give if he were disposed to give away his money, and the landlord would have less; but there is no reason to suppose that more would be given away altogether than there is now.

And if all rents were to be entirely abolished, and every farmer were to keep the land he now occupies, without paying anything for it, this would only be taking away the land from one man and giving it to another—the one would be robbed and the other enriched; but the supply of corn and the price of it would not be altered by such a robbery. Or, again, if you were to make a law for lowering rents, so that the land should still remain the property of those to whom it now belongs, but that they should not be allowed to receive more than so much an acre for it, the only effect of this would be, that the landlord would no longer let his land to a farmer, but would take it into his own hands, and employ a bailiff to look after it for him.

This is a very common practice in some countries abroad; but the land is seldom so well cultivated on that plan as when it is let to a farmer who has been bred to the business, and whose livelihood depends on his making the most of his farm.

## THE SLAVE SINGING AT MIDNIGHT.

WHILE we lament that the United States should in the persons of her negro population violate all the principles of liberty, it is consoling to know that her choicest and most gifted sons feel deeply the degradation of the enslaved race, and the dishonour done to their country's fame. The following pathetic poem is by America's "latest bard," LONGFELLOW.

LOUD he sang the Psalm of David !  
He a Negro and enslaved ;  
Sang of Israel's victory,  
Sang of Zion, bright and free,

In that hour, when night is calmest,  
Sang he from the Hebrew Psalmist,  
In a voice so sweet and clear  
That I could not choose but hear.

Songs of triumph and ascriptions  
Such as reached the swart Egyptians,  
When upon the Red Sea coast  
Perished Pharaoh and his host.

And the voice of his devotion  
Filled my soul with strango emotion ;  
For its tones by turns were glad,  
Sweetly solemn, wildly sad.

Paul and Silas, in their prison,  
Sang of Christ, the Lord arisen ;  
And an earthquake's arm of might  
Broke their dungeon-gates at night.

But, alas ! what holy angel  
Brings the slave this glad evangeli ?  
And what earthquake's arm of might  
Breaks his dungeon-gates at night ?

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## PUBLIC BATHS AND WASHHOUSES.

AMONG the many paths which the active spirit of benevolence has taken to better the condition of the humbler classes, few have led more directly to their benefit than the establishment of public washhouses and baths.

The washing day is notoriously a day of discomfort to the house of any one subject to it, even with the accommodation which ample means afford ; but to the mechanic, with perhaps only one room, at most only one to sit down in, it is a positive evil ; yet it must be endured, as no prudent and economical housewife will send her clothes to a laundress. The public washhouses, which enable the industrious wife to wash her clothes cheaply, well, and without annoyance to her husband and family, are truly benevolent institutions.

The public baths also recommend themselves highly as conduced to personal cleanliness, and as affording not only comfort to those who use them, but by also fortifying the body against disease. Few of our readers can be ignorant of the fact that want of cleanliness produces not only physical but moral degradation.

We extract from the public journals the following return of public baths and washhouses for the quarter ending Midsummer 1852.

We should be glad to have learnt at the same time that they were self paying, as we think they ought, and will be found to be.

|                                          | BATHS.             |            |  | WASHHOUSES.        |                              |           |
|------------------------------------------|--------------------|------------|--|--------------------|------------------------------|-----------|
|                                          | Number of Bathers. | Receipts.  |  | Number of Washers. | Number of Hours Washing, &c. | Receipts. |
| <b>METROPOLIS:—</b>                      |                    |            |  |                    |                              |           |
| The Model, Whitechapel                   | 47,117             | 655 18 10  |  | 9,472              | 23,060½                      | 149 1 11  |
| St. Martin's-in-the-Fields               | 61,025             | 982 13 2   |  | 13,957             | 20,235                       | 141 16 7  |
| St. Marylebone —                         | 50,206             | 651 0 1    |  | 7,236              | 21,421                       | 83 1 1    |
| St. Margaret and St. John, Westminster   | 30,749             | 373 5 9    |  | 12,722             | 26,228½                      | 130 8 4   |
| Greenwich — — —                          | 18,369             | 234 2 5    |  | 1,093              | 3,225½                       | 22 4 10   |
| St. James, Westminster, opened June 12 — | 6,843              | 79 10 11   |  | —                  | —                            | —         |
| Totals — —                               | 214,369            | 2,976 11 2 |  | 41,502             | 103,220½                     | 532 12 9  |
| <b>COUNTRY:—</b>                         |                    |            |  |                    |                              |           |
| Liverpool                                |                    |            |  |                    |                              |           |
| Cornwallis Street —                      | 30,960             | 470 13 11  |  | —                  | —                            | —         |
| Paul Street — —                          | 11,102             | 147 6 5    |  | 4,276              | 22,019                       | 33 9 5    |
| Hull — — — —                             | 16,874             | 162 3 6    |  | 1,668              | 5,867½                       | 27 16 3   |
| Bristol — — — —                          | 11,464             | 147 8 3    |  | 2,590              | 4,428½                       | 21 12 4   |
| Preston — — — —                          | 7,755              | 79 18 3    |  | 1,374              | 3,968                        | 16 16 9   |
| Birmingham — — — —                       | 23,525             | 3/3 12 10  |  | 649                | 2,729                        | 27 11 0   |
| Maidstone — — — —                        | 5,186              | 62 4 4     |  | 210                | 613                          | 4 16 4    |

#### NATIVES OF AFRICA (*completed*).

WE now pass from the Negro country southward, not without aspirations that it may be brought, in God's good time, into the fold of the Redeemer.

Among the few bright spots in this ill-fated continent is a portion of Cape Colony. Since the appointment of the first bishop of Capetown, new vigour has been infused into the missions, and their number has largely increased. Efforts are in progress to evangelize even the Kaffirs; but we dare not entertain sanguine hopes of their conversion.

The British campaigns in Kaffirland are of painful interest. The hardships of the soldiers have equalled their perils. There is no security day or night, for the Kaffirs carry on their warfare by skulking through the forests in ambush, and attacking the troops in the wild passes and narrow gorges of the mountain ranges. Once, and once only, we believe, the cavalry of the British army surprised the Kaffirs in an open plain, and inflicted on them such a defeat as would make their tribes long remember the banks of the "Gwanga."

The Hottentots are an entirely different race. Their origin, like that of the Kaffirs, is uncertain, but they are supposed to be of Egyptian descent. The Hottentots are usually dirty, drunken, and idle, but when enlisted under British officers they have often done good service during the Kaffir wars. The instinct which guides them across the plains and forests of South Africa is very remarkable, and resembles the power which the North American Indians possess of finding their path (or trail) with unerring accuracy through the "bush" or "prairie." This Hottentot instinct, which is

peculiarly valuable in a scantily inhabited country, is described in Colonel Napier's very agreeable journal. "Endowed with the most acute powers of vision, he will for miles and miles trace the footsteps of either man or beast. Place him once on the 'trail,' and no bloodhound can follow it up more accurately by scent than the 'Totty' will do it by sight.. A single blade of grass removed from its original direction—a ruffled leaf on the bush—are sufficient evidences to direct him," &c., &c. The long warfare against these crafty tribes has given rise to many extraordinary escapes and adventures, which are told over the watch-fires by the old settlers.

The darkest passions of our nature appear when the heathen African is victorious over his foe. The warfare of Christian nations is usually carried on in a generous spirit. The English and French armies during the Peninsular war were merciful to the wounded, and treated them with chivalrous courtesy. Even in battle their Christian profession mitigated their excited passions, in remarkable contrast to African hostilities. Colonel Napier remarks, "The Fingoe bears towards the Kaffir, as the enslaver and oppressor of his race, a hatred which he imbibes with his mother's milk—a hatred truly 'African,' unmitigated by anything approaching to mercy; the ferocious eagerness with which they searched among the tall grass for their crouching foes, and despatched them mercilessly and in cold blood, was truly demoniac."

The account of the slaughter of the Mantattee tribe by hordes of Bechuanas is too terrible to relate, and we merely allude to these cruelties of the *heathen*, in order to show the blessed change which the profession of the Gospel effects in softening the customs and character of a people.

A large proportion of the farmers of this colony are of Dutch extraction. The Dutch possessed and colonized this country during many years; it was conquered by the English early in this century. The Dutch "boors" are a hardy and bold race, trained up among dangers and surrounded by enemies. Their rifles are continually needed to repel the plundering Kaffir or Bushman, and to attack lions and other beasts of prey. When the Kaffirs have driven away the cattle of a settlement, the farmers mount their horses, and form what is termed a "Commando," which is a hasty assemblage of armed men under their "landrost." They pursue the track of the plunderers, and usually recover the spoil, not, however, without a fight.

The farmers have a dangerous foe in the "Bushmen," a very remarkable tribe; they are pygmy Hottentots, probably the most degraded specimens of the human race to be found in the world, and the ugliest. They are named from the *bushes* and thickets in which they conceal themselves. Specimens of this diminutive and miserable-looking race have been exhibited in London. These dwarfish hordes are very mischievous; they never work, but remain concealed during the day in woods and caves; at night they sally forth with bows and poisoned arrows to commit depredations on the colonists. "Should a settler go but five hundred yards from his house, he is under the necessity of carrying a musket. He can neither plough, nor sow, nor reap, without arms. If he would gather a few greens in the garden, he must take his gun in his hand."

The Bushmen are bloodthirsty, and put to death with excruciating tortures, those of their tribes who have become servants to the Dutch, should they chance to make them prisoners. To conclude the melancholy picture of this debased branch of the human family, we shall make the following extract from the narrative of an eye-witness:—"Disdaining labour of every

kind, the Bushman seizes, when he can, on the farmer's herds and flocks ; recklessly destroys what he cannot devour ; wallows for days with vultures and jackalls amidst the carcases of the slain, and, when fully gorged, slumbers in stupor like a wild beast. He feasts indifferently on the lion or the hedgehog, and, failing such dainty morsels, he contents himself with roots, locusts, ants, or pieces of hide steeped in water ; as a last resource he tightens his 'girdle of famine,' and lays him down to sleep." The average height of the men is considerably under five feet ; that of the women little exceeds four.

The journal of Governor Van Riebeck, the first Dutch Commandant at the Cape, is not a little entertaining. This worthy held a conference with the Hottentot chiefs, and complains of the injury done to his dress by their embraces. "They had (he writes) so besmeared themselves with grease, that they shone like looking-glasses in the sun, the fat trickling down from their heads and along their whole bodies."

In the early days of the Dutch East India trade, their vessels used to touch at the Cape, where a simple post-office was established, by leaving letters under certain appointed stones, where succeeding ships would be able to find them.

Not so harmless were the visits of the Portuguese, who in 1510 landed at the Cape. A native seized the brass buckles of one of the crew, which led to a quarrel, in which 75 Europeans were killed. The revenge for this loss was crafty and deadly. On the landing of the expedition three years after, the Portuguese brought a *brass* cannon as a present to the natives. Two long ropes were fastened to the mouth of the gun, and the Hottentots, suspecting no harm, dragged away the metal they prized so highly. Whilst a large number were thus engaged within range of the shot, the Portuguese discharged the piece, and a lamentable slaughter ensued.

The "spirit of the age" has not yet done much to accelerate communication in South Africa. The inhabitants travel, like their Dutch forefathers, in heavy wagons, drawn often by sixteen oxen. These cumbrous vehicles are dragged over mountains, and through rivers and forests, where neither roads nor bridges are to be found. Journeys become consequently remarkably tedious ; and it seems strange, that pack-horses or camels have not been substituted for the transport of travellers and merchandise. A want of the energy usual in the Anglo-Saxon race has been shown likewise in the neglect of precautions against "drought," which is the great scourge of the settlers. The heat of their summer (which is our winter) dries up the pools and rivers, and whole herds perish frequently for want of water. Were the settlers to adopt the system of tanks, which are universal in India, this evil might easily be remedied. Streams abound and swell into torrents during the rainy season ; by means of embankments, which the hilly nature of the country would make practicable, a copious supply of water might be ensured during the dry months. It appears, however, that the insecurity of life and property near the Kaffir frontier, has deadened the enterprise and energies of the colonists.

To complete our task of describing "the natives of Africa," it remains, that we should mention the wonders of the animal kingdom. This is the native land of the lion, the elephant, the panther, the rhinoceros, and the buffalo, besides many other genera unknown to Europe. Here the hippopotamus inhabits the marshy rivers, and antelopes of various species graze in vast herds on the plains ; here, too, the giraffe is found, with its stately neck and mild eye ; so mild, that we wonder how the hunter can reconcile

his conscience to the *wanton* destruction of such a noble work of the Creator.

An author, has very well expressed the beautiful adaptation of the animal kingdom to the respective spheres intended by the Almighty for each peculiar race. The writer, in his allusions to the various *colours* of animals, points out how the tawny-yellow colour of the lion agrees with the hue of the sandy deserts, or parched grass, through which he prowls. The tiger is different; his home is in the jungles of India, and were he of one uniform colour, he would be easily distinguishable, whereas the streaked hide, covered with dark perpendicular stripes, offers some imitation of the young trees and brushwood, among which he crouches. The panther lies on the branch of a tree, watching for prey. The spots on his hide blend with the leaves of the wood, and cause him to be less easily perceived. The giraffe lives in ancient forests, and his long dun-coloured neck so nearly resembles, when seen in the distance, the stem of an old tree, that some of the most practised sportsmen have admitted that they have been often deceived, mistaking sometimes the tree for an animal, or the animal for a tree. This provision of the Creator is further visible in Arctic regions, where the bears and other lesser animals are white as the snows among which they live.

The love of "sport," inherent in Englishmen, has led many of our countrymen to the wilds of Africa in search of this noble game. The adventures and perils of Mr. Gordon Cumming are of thrilling interest, but we cannot but regret the unfeeling manner in which he slaughtered herds of harmless animals, valueless for food or gain.

He is a man of iron nerves, and they have been tested in the conflict with lions: on one occasion a wounded lioness sprang with an appalling roar upon the flank of the horse on which he was mounted; he slipped dexterously from his saddle, and with a second shot laid her lifeless on the sand. The wonder and admiration of the natives was excessive: "they rushed about, shrieking and yelling, as if they had been mad." He represents it as a noble sight, to witness a troop of lions coming down by night to drink at the rivers. Their roaring is terrible, especially if, as often happens, a battle ensues. Sometimes a few lions in company give chase to a herd of buffaloes; the attack is said to be tremendous. The skeletons of a lion and an antelope were found mouldering together: the horn of the antelope had pierced the lion's body, and in this position both had perished.

The followers of Mr. Cumming did not fare so well as their master. One night, as they sat round the camp-fire, the murderous roar of a lion was heard, followed by the shrieking of the Hottentots. The lion leaped among them, and dragged off one of the wagon-drivers. He devoured him in the thicket, within forty yards of the camp, and was shot the next day.

The Hottentots live in continual fear of the lion; and this they may well do, since the bow and arrow are no protection against the king of beasts. The outlying villages lose annually many inhabitants through the incursions of lions, who are attracted at night time by the watch-fires. The defenceless natives greet as deliverers those English Nimrods, who, with stout hearts and unerring rifles, clear their country of those dangerous enemies.

A Dutch settler, while engaged on his farm, saw a lion approach his house: it lay down at his door, close to his wife and child, who were too

much terrified to escape. The farmer reached the house by a back entrance, and loaded his gun. Presently, the danger became more imminent, for the lion began to rise. The father fired; the ball passed close by the child's head, lodged in the skull of the lion, and stretched him dead.

Another escape is recorded in a quaint old Chronicle of the Cape. A drunken trumpeter of the garrison was carried off, when sleeping, by an old lion, which haunted the Table Mountain. It appears, that the bugler was awakened, and had the presence of mind to sound a blast on his trumpet, which so greatly alarmed the lion, that he dropped his prey and went off.

When once the lion has tasted human flesh he will prefer it to all other, and will not touch the flock if he can seize the shepherd; he will also single out a Hottentot from among a party of Europeans.

A British officer was placed in jeopardy in South Africa by the attack of a wild boar. He escaped by climbing up a tree, at the foot of which the boar lay in wait for many hours. The officer availed himself skilfully of the moment, when a hound, which accompanied him, had pinned the wild hog to the ground. He leaped from his shelter, and drove a small penknife into the carotid artery of the boar, which presently bled to death.

Mr. Cumming describes a more thrilling scene of danger. One night, when he was, as usual, on the track of wild beasts, he fell asleep and was awakened by strange noises. He looked up and found himself surrounded by a pack of the wild dogs, which in Africa prowl over the plains, and hunt down even the buffalo and the antelope. He gave himself up for lost, and expected each moment that they would fall upon him and tear him to pieces. His presence of mind suggested, that the sound of the human voice, and a bold bearing, might intimidate them, so he leaped up, with a loud shout, which had the effect desired. It is a peculiarity of the East, that the cities swarm with dogs. They run about wild, without owners or homes, and are suffered to exist, because they are serviceable, as scavengers, to remove offal and other impurities, which might else breed a pestilence. The dogs represented in the parable as licking the sores of Lazarus, may be supposed the counterpart of the savage animals, which in modern times "run about through the city."

The appointment of an African Bishop in the communion of the Church of England is of peculiar interest, since, by that fact, our Church is now represented in all the four quarters of the globe, besides the thriving dioceses in the newly-colonized continent of Australia and the islands of New Zealand. This vast expansion is a gratifying proof of the zeal and vitality of our own branch of the Church of Christ. He who, by the Divine appointment, fills the episcopal office in the Cape Colony, is one whom neither climate nor distance, nor hardships, nor dangers, deter from an energetic fulfilment of his arduous duties—the more arduous, since he is the first prelate who has watched over our African dependencies. In apostolic perils and labours he is, by God's blessing, laying deep the foundations of a sound and scriptural church-polity in a land, destined probably to become an important empire. The South African Church Magazine contains the following paragraph:—"The Bishop, after a trying and perilous journey overland from Natal, of twenty-two days (during which his cart and horses were twice overturned, and the former broken to pieces), arrived, by the providence of God, safe at King William's Town, where his Lordship's presence gave universal joy."

The offer of Archdeacon Merriman to proceed with his family on a mission to the Kaffirs is a proof of great zeal and self-denial. He is willing to adapt himself to their customs, and to spend his life among their rude tribes, without any prospect of worldly advantage.

At Liberia on the western coast, there is another important Episcopalian Mission, founded by the Church of North America. The origin of the Liberian colony is as follows. The American Colonization Society were desirous to found a free community of blacks, whence civilization and Christianity might spread along the coasts and into the interior of Africa, Africans being the agents. None are slaves within this independent state, which extends 500 miles along the coast: its government resembles that of the United States. The immigrant coloured population amounts to about 7,000; the natives number about 250,000 souls; the former are principally liberated slaves. This colony is now under the spiritual superintendence of Bishop Payne, who for many years laboured as a missionary among the native converts of Liberia.

We may now briefly recapitulate what has been stated. The map will exhibit in the continent of Africa, a region of vast extent, but barren and inaccessible, a natural and a moral wilderness, inhabited by fierce animals and still fiercer men,—peopled by nations, among whom the charities of life are almost unknown,—to whom the word “mercy” seems unintelligible, and “truth” a fiction. And why this? It is because the Gospel is a sealed book, and superstitious idolatries debase the mind. Africa offers a very dark picture to the Christian world; over it is spread morally, what once, literally, shrouded one portion of it—“a darkness which might be felt.” The south and west of Africa are mainly Heathen. Egypt and the Mediterranean shores are worse than Heathen; they are apostate. There is the gloom which broods where “a candlestick has been removed.” There is no relief to this picture, no bright lights to cheer. From the Mediterranean to the Equator, and thence beyond the southern tropic, Africa is “full of darkness and cruel habitations.”

The Christian homes, and happy families, and village churches of our country, have not their counterpart among our sable fellow-creatures in “the land of Ham.” Especially miserable is the lot of the female sex in this barbarous country; their position is one of hardship, degradation, and toil. Every traveller and eye-witness concurs in expressing grief and indignation at the tyrannical conduct of the savage towards his wives and female relations. Nay! the Kaffir so far stifles the dictates of nature, as to expose his parents, when worn out by old age or disease, to the wild beasts!

What the intentions of Almighty God may be towards Africa we cannot well discern, neither would it be reverent to form a premature judgment as to His hidden decrees. “Is anything too hard for the Lord?” Even the cruelty, impurity, and treachery, which now blight the African character, may, by God’s blessing, yield to the converting grace of the Gospel of Christ. It may be that the saving truths, which our Church is bringing to bear upon the Negro mind, may leaven the great kingdoms of Nigritia, and that a like work of conversion may bring the Hottentot and the Kaffir under the shadow of the Cross!

The days of miracles are past, and the supernatural Missionary gifts of the day of Pentecost are withdrawn. The more then are patience and faith needed: it is by a *gradual* process that we must look, under God, for the spiritual improvement of these benighted nations. Our Missions must be

schools of industry, as well as of piety. The arts and comforts of peace must be taught; *old* and bad habits must be expelled by implanting *new* and good ones; purer tastes must drive out the cruel customs of yore. Christian teachers must set before their converts examples of love, and peace, and faith, and self-denial. The Church must employ her visible influences to control the reclaimed minds, and to lead them forward by a fixed rule of faith and worship and by services ever-recurring.

Gradually the work will deepen, and a change will come over the spirit of a people. The young, trained under happier auspices, will be humanized, and "home" will become to them what it is to us. Comfortable dwellings, decent attire, steady industry, and the other blessings of civilization, which accompany the Gospel, will bear their part in the transformation of the African mind,—a change, which the grace of God alone can effect, and which is manifestly needed, ere the Moor adore the Saviour, whom he now blasphemers—or the Egyptian become pure and truthful—or the Kaffir be gentle and beneficent—or the Dahoman put on "the ornament of a meek and quiet spirit."

These statements and descriptions open to us causes of deep gratitude for the blessings we enjoy at home. We have reason to be thankful that our dwellings are not like the "kraals" of the savage in Kaffirland,—that our lives are not in perpetual hazard from the attacks of man or beast,—that our climate exempts us from the droughts, the scarcity, the vermin, and the intolerable heat which pervade Africa,—that our civilization banishes the barbarous customs and degrading filth of the Hottentot—above all, that our Religion points us to a holier Pattern, a purer faith, and a more exalted prize, than ever idolater was taught to copy, to hold, or to aspire after.

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#### SNOW BRIDGES.



GLACIERS abound in cracks, fissures, or chasms, and these sometimes become the receptacles of avalanches or enormous masses of ice and snow, which fall from the upper regions of the mountain. In their fall these masses

occasionally become lodged half in, half out of the chasm, and thus form a bridge by which it may be crossed. Travellers who have reached the summit of Mont Blanc, describe the crevasses in the upper regions of that mountain as most singular, awful, and sublime spectacles. Approaching cautiously the edge of one of these yawning chasms, those who have sufficient steadiness of nerve may look down on a gulf of unknown depth, whose lower parts are clouded in darkness, but whose sides display all the magnificence of icy crystallization, the smooth walls being covered with a network of hoar-frost, more delicate than gauze, and more varied than hangings of damask; while round the edge of the chasm frequently hang the most superb icicles, clear as crystal.

In the ascent to Mont Blanc is a valley or frozen lake, called the Grand Plateau, enclosed on three sides by mountains, and on the other by glaciers. A wide chasm separating the glacier from the Plateau has to be crossed by travellers,—the means of communication being an immense mass of snow, which has become lodged in the crevasse, and which serves the purpose of a bridge. Our engraving represents this remarkable bridge, and a party of travellers who had the boldness to make that dangerous situation their resting-place, and even breakfasted on the bridge. One of them (Mr. Auldjo) thus describes the scene:—“ While breakfast was preparing, I could not resist the temptation of wandering along the edge of the crevasse on the Plateau side. The depth of it was immense; its great breadth affording me an opportunity of a more accurate and perfect examination than I had had before. The layers of ice forming the glacier, varying in colour from deep bluish green to a silvery whiteness, with myriads of long clear icicles hanging from all the little breaks in the strata, presented a scene of the greatest beauty. From this point I had a view immediately under our bridge: the manner in which it hung suspended, with all the guides sitting on it, many hundred feet from the bottom of this stupendous chasm, was a beautiful and curious, but at the same time an appalling sight. In one moment, without a chance of escape, the fall of the bridge might have precipitated them into the gulf beneath. Yet no such thought ever entered the imagination of my thoughtless but brave guides, who sat at their meal singing and laughing, either unconscious or regardless of the danger of their present situation.”

It was on the Grand Plateau, that, in 1820, through the rash obstinacy of Dr. Hamel, three guides were swept away by an avalanche.

Dr. Hamel had reached this part of the ascent to the summit of Mont Blanc; when the guides, from certain atmospheric indications, foreseeing bad weather, requested him to give up the attempt: he rejected their advice, and ascribed it to cowardice: piqued by this insinuation, the ascent was persisted in, until the party was stopped by the accident.

In the awful solitudes of these mountains, the traveller feels almost oppressed with the sense of his own insignificance. He seems a mere atom, a speck in creation, and he turns with renewed gratitude to that revelation which assures him of the merciful regard of the Father of all these wonders, who does not overlook the meanest objects, and without whom not even a sparrow falleth to the ground.

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## THE PEACOCK.



THIS noble fowl, though not a native of this country, has been domesticated with us so long as to be familiar with all our readers. The genus, which contains but two recognised species, is distinguished by the following characters : the beak is convex, rather stout, curved towards the tip, smooth at the base ; the cheeks partially naked ; the nostrils, situated at the base of the beak, are open ; the head surmounted with an erect crest of slender, peculiarly formed feathers ; the wings are short, the sixth quill the longest ; the tail-coverts very long, broad and erectile, in the male.

The Common Peacock is mentioned as known in Greece in very early times ; Eupolis and Athenaeus, who flourished in the fifth century before Christ, speak of it ; and even five centuries farther back, it was regularly imported into Judea from the east in the fleets of Solomon : while, at an era still more remote, its beauty is appealed to, as a thing commonly known on the southern border of the same country.\*

It seems scarcely necessary to describe a bird so familiarly known ; to dilate upon its light coronet of lance-tipped feathers, its taper neck, and swelling breast of changeable purple, its back and wings of brassy-green, or its superb lengthened tail-coverts, with their dilated tips marked with eye-spots of the richest purple, surrounded by rings of green, black, and chestnut, radiant with gem-like reflections. These feathers do not constitute the tail, for they begin to grow far up on the back, so that when erected and spread, scarcely more than the head and neck of the bird appear

\* Job xxxix. 13.

in front of them. The true tail is situated beneath, and is commonly concealed by these, consisting of eighteen brown, stiff feathers about six inches long.

Innumerable flocks of these splendid birds in a wild state exist in the forests of India and the great adjacent islands : and these have been ascertained to be specifically identical with our domestic races. Colonel Sykes describes the species as abundant in the dense woods of the Ghauts ; it is readily domesticated, and many Hindoo temples in the Deccan, as he informs us, have considerable flocks of them.

Colonel Williamson also, in his account of Peacock-shooting, states that he had seen about the passes in the Jungleterry District, surprising numbers of wild Pea-fowl. He speaks with admiration of the whole woods being covered with their beautiful plumage, to which the rising sun imparted additional brilliancy. Small patches of plain among the long grass, most of them cultivated, and with mustard then in bloom, which induced the birds to feed, increased the beauty of the scene. "I speak within bounds," observes the Colonel, "when I assert that there could not be less than twelve or fifteen hundred Pea-fowls, of various sizes, within sight of the spot where I stood for near an hour."

From the same respectable authority we learn that it is easy to get a shot at these fine birds in the jungle, but where they flock together, as they do to the number of forty or fifty, there is greater difficulty. Then they are not easily flushed, and run very fast ; so fast, indeed, that the Colonel doubts whether a slow spaniel could make them take wing. Their flight is heavy and strong, generally within an easy shot ; if merely winged, they frequently escape by swiftness of foot. They roost on high trees, into which they fly towards dusk.

The flesh of the Peacock, when not old, is juicy and savoury, and though not often eaten now, was in former times an important addition to great banquets. It was served up by the sewer with much ceremony, dressed in its own brilliant plumage. The adventurous knight of the days of chivalry was accustomed to make his solemn vows, "before the Peacock and the Ladies."

#### THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.

##### HISTORICAL NOTICES OF THE SUGAR-CANE.

As sugar is most abundantly supplied by the sugar-cane, much interest has been excited respecting the early history of this plant. It has been supposed that the Hebrew word, which frequently occurs in the Old Testament,\* and is sometimes translated *calamus*, sometimes *sweet-cane*, means the sugar-cane. It is mentioned for the first time in Exodus, where Moses is commanded to make an ointment with myrrh, cinnamon, *sweet-calamus*, cassia, and oil olive. The calamus does not appear to have been a native of Egypt or Judea ; for in Jeremiah it is mentioned as coming from a far country. "To what pur-

pose cometh there to me incense from Sheba, and the sweet-cane from a far country ?" It has been argued, that if the cinnamon mentioned in the passage of Exodus were true cinnamon, it must have come from the East Indies, the only country in the world from which it is obtained ; and that it is, therefore, highly probable that the sugar-cane was exported from the same country.

Among the ancient writers of Greece, Herodotus alludes to the "honey made by the hands of man." Nearchus, Alexander's admiral, relates, that "the reed in India yields honey without bees." Theophrastus describes three kinds of honey ; one from flowers, another from the air (referring probably to honey-dew), and a third from canes or reeds.

\* Exod. xxx. 23. Sol. Song iv. 14. Isa. xliv. 24. Jer. vi. 20. Ezek. xxvii. 19.

Other ancient writers are more or less precise in their mention of sugar, until we arrive at the time of the Roman Emperor, Nero, when Dioscorides uses the word *saccharum*, or sugar: his description refers to a species of sugar-candy, but he was evidently not aware of the mode of preparing it. He says: "There is a sort of concreted honey, which is called sugar, found upon canes in India and Arabia Felix: it is in consistence like salt, and it is brittle between the teeth, like salt." Seneca was also ignorant of the real character of sugar: he describes it as honey found on the leaves of canes, and produced by the dew or the sweet juice of the cane itself concreting. Pliny describes sugar as brought from Arabia and India: "It is honey collected from canes, like a gum, white, and brittle between the teeth; the largest is of the size of a hazelnut; it is used in medicine only." Galen, who wrote in the second century, also speaks of sugar; and in the seventh century, Paulus Aegineta quotes an earlier writer, who describes sugar as "*the Indian salt*, in colour and form like common salt, but in taste and sweetness like honey."

It appears that, during a long period, the sugar-cane was confined to the islands of the Indian Archipelago, the kingdoms of Bengal, Siam, &c., and that the sugar was imported with perfumes, spices, and other merchandise, to the countries on this side of the Ganges. The traffic in sugar being lucrative, the Indians concealed the knowledge of the sugar-cane: they informed the merchants of Ormus that they extracted sugar from a reed, whereupon many attempts were made to obtain it from the reed-like plants of Arabia; but these were all unsuccessful.

The doubts respecting the real nature of sugar were not resolved until the year 1250, when Marco Polo visited the country of the sugar-cane. On his return, the merchants, who had hitherto purchased sugar at Ormus, repaired to the country of its growth. They brought away the sugar-cane and the silk-worm, and from Arabia Felix these valuable productions passed into Nubia, Egypt, and Ethiopia, where sugar was soon

produced in abundance, although its quality was very inferior, from ignorance of the means of preparing the juice. In 1420, the Portuguese introduced the sugar-cane from Sicily to Madeira; and, during the same century, it was probably carried from Spain to the Canaries. So successful was the cultivation, that the sugar of these countries was preferred to any other. The Portuguese also successfully transplanted the sugar-cane to the island of St. Thomas, and other islands on the African coast. Soon after the discovery of the New World, the Spaniards established sugar-works in Hispaniola, or St. Domingo: workmen were sent from the Canaries to manufacture the sugar, and the cane flourished so well, that its produce afforded a large revenue to the mother country. In 1641 the cane was transplanted from Brazil to Barbadoes, and thence to the other West India Islands.

For a long period the use of sugar in England was confined to medicines and feasts; and this continued until 1580, when it was brought from Brazil to Portugal, and thence to our country.

Mr. Porter remarks, that "The merchants who introduced the cane from India certainly neglected to bring, also, the necessary instructions as to the methods of preparing the juice; and the difficulties which the Arabian cultivators experienced, doubtless caused them to try the use of all kinds of ingredients for its purification, and to invent conical vessels for crystallizing and cleansing the sugar." The Venetians introduced the art of sugar refining into Europe, at the end of the fifteenth century. At first they imitated the Chinese, and sold the sugar which they purified in the shape of candy, cleaning and refining the coarse sugar of Egypt three or four times over. They afterwards adopted the use of cones, and sold refined sugar in the loaf. This example was soon followed by the establishment of sugar refineries in all the commercial cities of Europe.

#### VARIETIES AND SOURCES OF SUGAR.

We are accustomed to associate sugar only with the sugar-cane, yet it is

one of the most abundant productions of the vegetable world. It is found in a liquid state in most plants ; it is manufactured from beet-root, from the sap of the maple, and other vegetable bodies ; and this wide distribution of so valuable an article of food is one out of the many instances of the bounty of Providence in supplying our wants.

Of the numerous varieties of sugar, some can be made to ferment, others not ; some can be formed into crystals, others not ; but it often happens that two kinds of sugar are mixed, as in the sugar-cane, the juice of which yields the finest crystals, and also molasses, or treacle.\* The size of the crystals, however, depends greatly upon the mode of treatment : when they are rapidly formed, as in common refined sugar, the crystals are small and confused ; but when obtained by the slow evaporation of a strong solution, they are large and transparent, as in sugar-candy.

Sugar is the principal food of the vegetable world. It exists largely in the succulent parts of plants and seeds when they begin to shoot. It is formed in several kinds of seed in the process of malting, which consists merely in steeping seeds in water until they sprout. In the ripening of many fruits there is a similar change. When palms are about to flower, the starch contained in their stems is changed into sugar. If plants are allowed to flower, the gum and sugar disappear from the roots or stems : this change applies to such common roots as the parsnip, carrot, beet, &c., as well as to the sugar-cane, maize, and other plants rich in sugar matter. The stems of grasses are also sweet at an early stage of their growth, when they are most nutritious and palatable to cattle, a circumstance which ought to regulate the time for making hay. In certain trees the starch formed in autumn is converted into sugar by the ascending sap in spring, and sugar is formed in considerable quantities from the sugar maple. The sap of the birch-tree, on being fermented,

\* An eminent French chemist is of opinion that the whole of the sugar furnished by the cane might be converted into crystals, molasses being formed, according to his view, by the boiling and other processes which the juice undergoes.

yields an agreeable beverage, called birch-wine.

The juice of grapes furnishes a peculiar kind of sugar, called grape-sugar, which has been traced in many fruits, such as pears, peaches, cherries, melons, dates, figs, and the chesnuts which grow in warm countries. Grape-sugar is also formed in the nectaries of many flowers, and is collected by bees ; hence honey belongs to this variety of sugar.

Grape-sugar can be procured from starch by the action of dilute sulphuric acid. Lignin or woody fibre, or any substance containing it, can also be converted into sugar by the same means. If sawdust, linen rags, paper, or other ligneous substance, be rubbed up with sulphuric acid, and the acid afterwards removed by adding an alkali or some powdered chalk, the ligneous body will be changed into a species of gum, which, being boiled for some hours in a weak acid, is gradually converted into sugar.\* It has been well observed, that, "however clumsy and inconvenient this process is in our laboratories, being, as we are, but Nature's journeymen, Nature herself carries on these transmutations with the most wonderful results, as we see in the ripening of fruits, when the hard woody texture gradually softens down into sweet and luscious pulp, as in the ripening of the pear, the grape, the strawberry, and, in short, almost all fruits."

The above varieties of sugar are granular or crystallino, and are all capable of undergoing the vinous fermentation. The only sugar which refuses to crystallize, but which can be fermented, is the molasses which remains after refining cane and other sugars, and this is largely used in the distillation of rum. Sugar of milk

\* The conversion of old rags into more than their weight of sugar has been regarded as one of the marvels of modern chemistry ; but the wonder ceases on comparing the ultimate composition of lignin, or woody fibre (of which rags are only an example), with sugar.

It appears from Dr. Prout's experiments, that all the varieties of lignin are similarly constituted. 1000 parts of lignin consist of 500 of carbon or charcoal, and 500 of water; 1000 parts of cane-sugar contain 421 of carbon and 579 of water. The different varieties of sugar contain variable proportions of carbon and water.

and *manna sugar* do not ferment. The former, sometimes called *Lactine*, is obtained by evaporating the whey of milk : the latter, also called *Mannite*, is contained in the manna which exudes from several species of ash : it is also found in the bark of the olive tree, in some species of pines, in the root and leaves of celery, in the bulb of the onion, in many kinds of seaweed, and in couch grass. By long exposure to the air the juices of many plants, such as beet, carrot, &c., generate manna sugar.

Sugar is extensively employed to preserve animal and vegetable substances, such as meat, fish, fruits, jellies, and many medicinal substances; and in some cases is preferable to salt in not destroying the true flavour of animal food. The sugar which is naturally formed in many fruits is sufficient to preserve them, as in raisins, figs, and other dried fruits.

In temperate climates sugar is rather a luxury than a necessary of life ; but in tropical countries it is extensively used as an article of food, and has been ranked inferior only to corn. Enormous quantities of sugar-canes are sent from the sugar islands to the markets of Manilla, Rio Janeiro, and the surrounding countries. The crude plant is called *Dutronc*,

"the most perfect alimentary substance in nature," and this praise does not seem to be exaggerated when we consider its effects upon the negroes at the time of cane-harvest. "The time of crop in the sugar islands," says Mr. Edwards, "is the season of gladness and festivity to man and beast. So palatable, salutary, and nourishing, is the juice of the cane, that every individual of the animal creation, drinking freely of it, derives health and vigour from its use. The incagre and sickly among the negroes exhibit a surprising alteration in a few weeks after the mill is set in action. The labouring horses, oxen, and mules, though almost constantly at work during this season, yet, being indulged with plenty of the green tops of this noble plant, and some of the scummings from the boiling-house, improve more than at any other period of the year. Even the pigs and poultry fatten on the refuse."

In separating the sugar from the juice, some of the nutritive substances are removed ; and it should not be forgotten, that the praises bestowed on sugar by different writers on this subject apply to the fresh juice of the cane, and not to the crystallized sugar in use among ourselves.

#### HOUSES AND INHABITANTS OF LONDON.

ACCORDING to a parliamentary return of the late census, just printed, it appears that the houses and inhabitants of the City of London, and the parliamentary boroughs are in—

|                | Inhabited Houses. | Population. |
|----------------|-------------------|-------------|
| City of London | 14,580            | 127,869     |
| Tower Hamlets  | 75,710            | 539,111     |
| Marylebone     | 40,513            | 370,957     |
| Finsbury       | 37,427            | 323,72      |
| Lambeth        | 39,154            | 251,345     |
| Westminster    | 24,755            | 241,611     |
| Southwark      | 23,751            | 172,863     |
|                | 255,890           | 2,027,528   |

This gives as an average eight persons for each house : but, as houses differ so greatly in size, it does not lead to any estimate as to the overcrowding of the dwelling-houses of the poorer classes. Thus, in Westminster, which includes many squares and streets occupied by the higher and wealthier classes, there are ten persons living in each house, while the Tower Hamlets and Southwark have only an average of seven persons in each house.

## THE VILLAGE BLACKSMITH.

UNDER a spreading chestnut tree  
 The village smithy stands,  
 The smith a mighty man is he  
 With large and sinewy hands ;  
 And the muscles of his brawny arms  
 Are strong as iron bands.

His hair is crisp and black and long,  
 His face is like the tan ;  
 His brow is wet with honest sweat,  
 He earns whate'er he can,  
 And looks the whole world in the face,  
 For he owes not any man.

Week in, week out, from morn till night,  
 You can hear his bellows blow :  
 You can hear him swing his heavy sledge,  
 With measured beat and slow,  
 Like a sexton ringing the village bell  
 When the evening sun is low.

And children coming home from school,  
 Look in at the open door ;  
 They love to see the flaming forge,  
 And hear the bellows roar,  
 And catch the burning sparks that fly  
 Like chaff from a threshing-floor.

He goes on Sunday to the church  
 And sits among his boys,  
 He hears the parson pray and preach,  
 He hears his daughter's voice  
 Singing in the village choir,  
 And it makes his heart rejoice.

It sounds to him like her mother's voice  
 Singing in Paradise !  
 He needs must think of her once more,  
 How in the grave she lies ;  
 And with his hard, rough hand he wipes  
 A tear out of his eyes.

Toiling,—rejoicing,—sorrowing,  
 Onward through life he goes,  
 Each morning sees some task begin,  
 Each evening sees it close ;  
 Something attempted, something done,  
 Has earned a night's repose.

Thanks, thanks to thee, my worthy friend,  
 For the lesson thou hast taught !  
 Thus at the flaming forge of life,  
 Our fortunes must be wrought ;  
 Thus, on its sounding anvil, shaped  
 Each burning deed and thought !

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

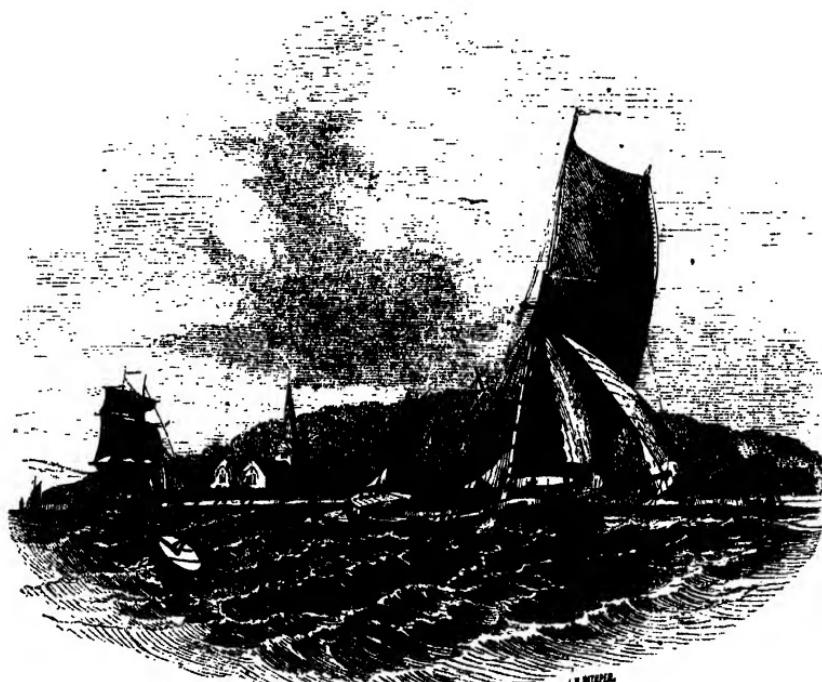
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ENGLAND'S RESOURCES IN TIME OF DEARTH.



THAMES CORN BARGE.

It is a merciful provision of the Almighty, that, in time of dearth, one country is frequently enabled to supply the deficiencies of another, and that one year often supplies a redundancy to help out the scarcity that may follow, or has preceded it. When the famine was "sore" in the land of Canaan and in the adjoining countries, Jacob said to his sons, "Behold, I have heard that there is corn in Egypt: get you down thither, and buy for

us from thence ; that we may live and not die." In this case the famine had been foretold, and the resources of Egypt had been wisely husbanded by Joseph during the years of plenty which preceded the time of dearth. And even now, seasons of comparative scarcity, though not foretold, are in some measure anticipated and provided for, either by government, as in foreign countries, or, as at home, by a class of persons who, in seeking to promote their own interests, are really serving the interests of the nation at large.

"In Sweden, Prussia, Spain, Denmark, &c., magazines or storehouses of grain are erected in different places, in order to guard against bad seasons. In Spain alone, there are upwards of five thousand of these depositories, called *positas*. Every occupier of land is obliged to bring a certain quantity of corn, proportionate to the extent of his farm; the following year he takes back the corn he has thus deposited, and replenishes the empty garner with a larger quantity; and thus he continues annually to increase the stock by these contributions called '*cresus*,' till a certain measure of grain is deposited; then every one receives back the whole corn which he has furnished, and replaces it by an equal quantity of new corn. Whenever a scarcity happens, these repositories are opened, and the corn is dealt out to the people at a moderate price. In some places seed-corn is distributed to necessitous husbandmen, who are bound to restore as much in lieu of it the next harvest. The institution of such a system as this is no doubt highly necessary in a country only in an imperfect state of civilization; but that which requires the authority of government to accomplish abroad, is in England brought about by less questionable means."<sup>\*</sup>

The commercial and enterprising spirit of our countrymen induces them to enter into speculative purchases, which in the end answer very much the same purpose. Our corn merchants purchase largely in years of plenty when prices are low, and store up wheat in expectation of an advance in the price. Thus, without intending to promote any other interest than their own, they really become the benefactors of the public, by providing a relief stock, which is of the greatest importance in a time of scarcity, and also by laying up what might otherwise be wastefully consumed while plenty lasts. Instead, therefore, of joining in the common cry against such persons, we have reason to be thankful that there are men of sufficient capital and experience to make these purchases, and that they are, generally speaking, disposed to sell immediately they can realize a fair profit. And if there are some who hold their corn in the hope of realizing enormous gains, and wait until the market begins to decline before they sell, it is often to their own shame and loss that they do it. The scarcity they create induces importation, and is thus more than compensated by the good eventually done. The immense amount of capital required to store corn largely, and the waste to which it is liable in the granary, also greatly check the desire to withhold corn too long.

Whatever may be the precautions employed by merchants and others in laying up for the future, there will be times and seasons when, as at present, we must look to other nations for a large amount of help as it regards our supply of corn. A total failure of crops scarcely ever happens throughout even one kingdom, for the weather which is unfavourable to one description of soil is generally advantageous to another; much less does it happen at the same time throughout the whole earth, in the various parts of which

\* Dimsdale.

seasons and climates so greatly differ. Thus in 1846, when Europe suffered in many parts a great deficiency in her harvests, it was so arranged by the bounty of the Creator that America should receive an overflowing supply. How important then the continuance of peaceful commerce and rapid communication between all nations, that the deficiencies of one country may be supplied by the abundance of another!

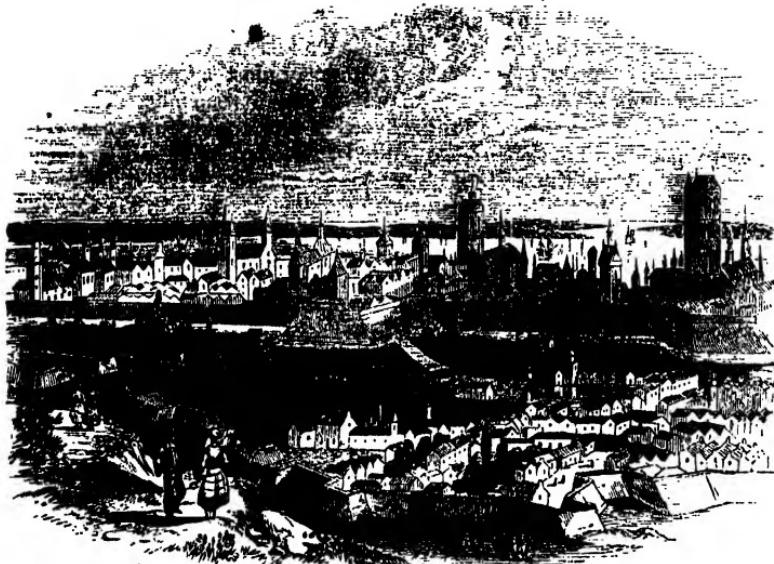
Hence during seasons of scarcity at home we feel the value of our foreign commerce, and eagerly inquire whence we may most speedily and safely obtain our supplies. At the same time it must be remembered, that our grand supply is as a general rule produced at home; for in no case can a numerous people, like that of the United Kingdom, be wholly or principally dependent on the soil of other lands for support. This might, perhaps, take place without much danger or inconvenience in the case of a small state or colony, but not with such a dense population as ours. For it is an ascertained fact, that "to supply these islands with the single article of wheat would call for the employment of twice the amount of shipping which now annually enters our ports, if indeed it would be possible to procure the grain from other countries in sufficient quantity; and to bring to our shores every article of agricultural produce in the abundance we now enjoy, would probably give constant occupation to the mercantile navy of the whole world."

But while our grand dependence will always be on our own resources, and on the advancing skill of our agricultural men, who, by improved systems of tillage and drainage, have of late years wonderfully increased the productiveness of the soil, yet there are times when a concurrence of circumstances will drive us to seek very extensive aid from other countries. The deficient harvest of 1846, and the pressure occasioned by the failure of the potato crop, produced in our own country and among many of the continental nations severe calamities, and great anxiety respecting the future. Through the mercy of God we have the prospect of a favourable harvest generally; but in the interval, we are naturally led to review the chief sources we have been accustomed to look to for our foreign supplies of corn, and to see how many of these remain available to us at the present time. To begin then with Europe, as the quarter from whence we have obtained, until lately, nearly the whole of our foreign supplies of corn.

At the head of all the corn-shipping ports, not only of Europe, but of the world, is Dantzic, situated on the left bank of the Vistula, about three miles from the sea (the Baltic). This is the grand emporium for the countries bordering the Vistula, both in its passage through Poland, and through part of Prussia. The soil in the neighbourhood of this river produces luxuriant crops, and is in every respect highly fruitful; but so extensive is the region from which corn is brought, that in seasons when there is a brisk demand, Dantzic is partly supplied from provinces from five to seven hundred miles inland. A large proportion of the corn-trade at this port is in our hands, therefore it is interesting to ascertain all particulars respecting the collection and mode of transit of these valuable stores.

The careless and wasteful plan on which grain is conveyed from the corn-growing districts of the Vistula to Dantzic is much to be regretted. From Cracow, where the Vistula first becomes navigable, down to the lower parts of the stream, the corn is chiefly conveyed to Dantzic in open flats. These are made on the banks in seasons of leisure, and are left to be floated when the rains of autumn, or the melted snows of the Carpathian mountains in spring, have raised the river far beyond the ordinary level. These barges

are about seventy-five feet long, twenty broad, and two feet and a half deep. They are made of fir, put together in a very rough manner, and fastened with wooden trenails; the corners being dovetailed and secured with slight iron clamps—the only iron used in their construction. A large tree the



CITY OF CRACOW.

length of the vessel runs along the bottom, to which the timbers are secured. This tree rises nine or ten inches from the floor, and hurdles are laid down upon it, extending to the sides. These hurdles are covered with matting made of rye-straw, and serve the purpose of drainage, there being a vacant space beneath to receive the water which leaks through the sides and bottom of the ill-constructed vessel. This water as it accumulates is dipped out at the ends and sides of the vessel.

The cargo usually consists of from one hundred and eighty to two hundred quarters of wheat, which is simply thrown on the mats piled up to the gunwale, and left uncovered, exposed to all the inclemencies of the weather and the pilferings of the crew, which consists of six or seven men. The barge is carried along at a slow pace by the force of the stream, and is preceded by a small boat with a man in it, who is employed sounding in order to avoid the shifting banks. The men on the barge merely use oars at the head and stern to direct the vessel in passing under bridges, or in avoiding sand-banks. Their progress in this way is very slow, so that several weeks, and even months, may be employed in the voyage. During this time, if the weather be rainy, the natural consequence is that the wheat begins to grow, and the barge speedily assumes the appearance of a floating meadow. The more rapidly this takes place the better, for the shooting of the fibres soon forms a thick mat, and prevents the rain from penetrating more than an inch or two. At the sacrifice of the whole upper surface of the wheat a covering is thus provided for the great bulk of the grain, which on the removal of its green roof, is often found in very tolerable condition.

When the cargo is deposited at Dantzig the barges are broken up, and

the men who conducted them return<sup>\*</sup> to their own country on foot. The grain, as it may be supposed, is not fit to be immediately placed in store-houses. It is spread out on the ground, exposed to the sun, and thoroughly dried. During rain and also at night it is piled up in the shape of a steep roof, and is covered with linen. Thus, according to the state of the weather, it may be a long or a short time in reaching the granary.

Near the lower parts of the river, where the wheat is generally of inferior quality, covered boats are employed with shifting boards, which protect the cargo from rain, but not from pilfering. The charge for bringing wheat from Cracow to Dantzic by water, is eight shillings per quarter; from Warsaw to Dantzic, five shillings. Land carriage is much dearer. From Lemberg, the principal corn-market of Galicia, wheat is brought by a tedious land route, and the cost of its conveyance to Dantzic is no less than twenty-six shillings per quarter. But all this is while steam conveyance is in its infancy. The progress of railway and steam-boat communication will, no doubt, make a great alteration in this district before many years have elapsed.

The excellent quality of much of the wheat grown in Poland causes it to be highly prized in this country. The fine heavy grain, known in London as Dantzic white wheat, is raised in a narrow district, in the province of Sandomir, Poland,—about sixty miles in length, and extending along the Vistula. Throughout the southern parts of Sandomir and Cracow, the crops are celebrated for their excellent quality: but the average growth is rarely beyond twenty bushels to the acre, the farming operations being imperfectly conducted.

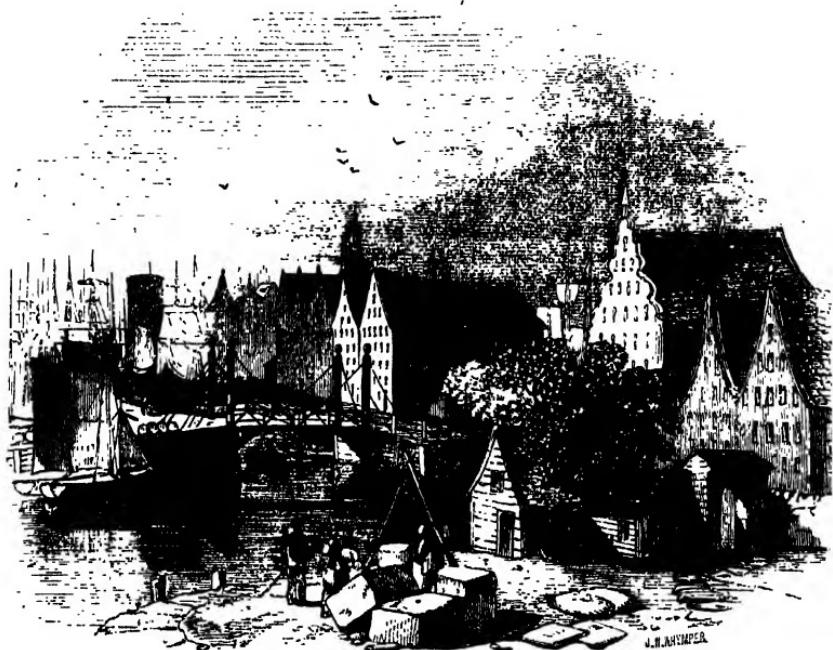
In Volhynia, one of the principal districts for supplying wheat to the markets of Dantzic and Königsberg, the population consists entirely of slaves, and either the proprietor farms his own estate, or lets it to what are called “possessors,” at the rate of so much per day’s labour, calculated for the peasant: thus the proprietor receives so many days’ labour, or rather he receives so much money for each day’s labour of the slave.

We have already seen that the grain from various districts, on arriving at Dantzic, is dried thoroughly, and afterwards stored in granaries.

These warehouses are generally seven stories high, with floors nine feet asunder. There are numerous windows for the ventilation of the corn, and sufficient spaces for turning and screening it. The whole of the corn-warehouses are capable of storing five hundred thousand quarters of wheat. Ships are loaded by gangs of porters, who will complete a cargo of five hundred quarters in three or four hours. These granaries are situated on an island formed by the Motlau, and are guarded by twenty or thirty ferocious dogs of large size, among which are blood-hounds. The dogs are let loose at 11 o’clock at night, and are kept within their districts by large high gates across the end of each of the streets leading to the main one. No light is allowed, nor any person suffered to live on this island. The dread of the dogs, it is said, is the most powerful means which could be used to keep the property secure amidst the hordes of Poles, Jews, &c., which are met with at Dantzic. No fire or robbery was ever known, and the expense to each building, with the immense property it contains, is very small. Vessels lying alongside these warehouses are not allowed to have a fire or a light of any kind on board, nor is a sailor or any other person suffered even to smoke.

These corn-stores of Dantzic, and the care taken to preserve them, are interesting and important topics at the present time; but the general

inquiry will be—at what season and to what extent are these stores available to us?



CORN WAREHOUSES, DANTZIC.

Now, we find that the Prussian and Polish landlords employ brokers at Dantzig to dispose of their wheat for delivery the following spring, and that the wording of the corn-contract generally fixes the period for the 15th of May, depending, however, on the weather for the exact fulfilment of the contract, as the breaking up of the ice, or "first open water," may take place at an earlier or later date.

The deliveries of grain, therefore, commence about the middle of May at that port, and are generally of great extent. Of course the supplies must vary greatly with the state of the adjacent countries, in some of which there may be, as at present, prohibitions against the exportation of wheat, on account of a deficient crop.

Next to Dantzig, Hamburg is considered the greatest corn-market of Northern Europe, being the depository for large quantities of Baltic corn, as well as for the produce of the countries bordering the Elbe. The price of wheat at this port is in general much lower than at Dantzig; but this is owing to the inferiority of Holstein and Hanover wheat, which abounds in this market.

Hamburg owes its importance, as a commercial town, entirely to its situation at the mouth of the Elbe. This fine river, in its long and winding course, intersects a vast extent of country, and affords great facilities for trade. Natural advantages are also enhanced by artificial means,—a water communication having been established by means of the Spree, and of artificial cuts and sluices between the Elbe and the Oder, and between the latter and the Vistula. Thus a considerable part of the produce of Silesia,

destined for foreign markets, and even some of that of Poland, finds its way to Hamburg. By another canal, communication is also obtained with the river Trave, and consequently with Lubeck and the Baltic; thus saving the dangerous and difficult passage of the Sound. From the wide extent of country thus traversed, corn can be easily and safely conveyed to the general dépôt at Hamburg, where a ready market awaits it. Notwithstanding the amount of trade carried on, there are no docks or quays at this port; but vessels moor in the river outside a series of piles driven into the ground, a short distance from the shore. There is a sort of inner harbour formed by an arm of the Elbe, which runs into the city, where small craft lie and discharge their cargoes. Most of the Danish corn is consigned to Hamburg; but this has not hitherto been of great amount.

Continuing our inquiries in the north of Europe, we find that several parts of Russia have sent us large supplies of corn. Petersburgh, the capital of Russia, has the most extensive general foreign traffic of any city in the north of Europe. The number of vessels annually entering the port varies from a thousand to sixteen hundred, of which the English are by far the most numerous. The Russians traffic with foreigners at Petersburgh, either personally or by their factors, during the winter months, and the goods are delivered in May (when the shipping season commences), or in the three succeeding months.

In the case of produce brought from northern countries, it will of course happen, that the time of its arrival here will depend more on the breaking up of ice, and on the earlier or later arrival of "the shipping season," than on any considerations relating to the harvest. In those countries, the close of harvest is not only the season for a suspension of agricultural labour, but is one in which foreign commerce must also be put a stop to; therefore it is that autumn or winter purchases of corn in northern ports are made with relation to the following spring.

The corn-trade of Petersburgh is of considerable importance, although the greater part of the wheat is of inferior quality. There are three varieties of wheat, known as *azemaiia*, or soft wheat; *kubanka*, or hard wheat; and Russian, or inferior small-grained wheat. The last, which is the most abundant, is of a very dark colour, and though sound, is unfit for the manufacture of fine bread. The hard wheat is the most prized, being a large semi-transparent grain, well calculated for long keeping, either in the granary, or when made into bread; so that it is in great request for mixing with grain that is stale or out of condition. When first brought to London the millers objected to it on account of the difficulty of grinding it; but having now ascertained its excellent qualities, they are glad to purchase it for mixture with other grain.

The next port of consequence in European Russia is Riga, the largest part of whose foreign trade is transacted with England. Riga wheat is, however, inferior to that of Dantzig, and the port has now become more celebrated for flax than for corn. Two descriptions of wheat reach us from Riga; one the growth of Russia, the other of Courland: the latter is much the best. Oats are likewise largely exported from Riga.

Russia has still another port in the extreme north from which corn is exported; but the great severity of the climate must always prevent much dependence being placed on these supplies. This port is Archangel, on the right bank of the Dwina, the principal city of a province bearing the same name, part of which is exposed to the Arctic Sea. So great is the sterility of many parts of this province, that the inhabitants use the inner

bark of trees, and certain species of moss, intermixed with meal, or substituted for it, in making bread. It is, therefore, not in this province itself, but in those farther inland that corn is raised for exportation.

The chief ports of northern Europe to which our merchants have been accustomed to resort for corn, have now been briefly noticed, namely, Dantzic, Hamburgh, Petersburgh, Riga, and Archangel: we may add, that Amsterdam is also an important dépôt where the wheats of the above-named ports are to be met with, as well as almost every other variety of corn.

Let us now turn our attention to Southern Europe, and consider the fertile and beautiful country of Spain. Scarcely thirty years ago, no corn was permitted to be exported from Spain under severe penalties; but the inhabitants are now free to export as largely as they please, not only corn, but all other produce of the soil. And this they might do to an immense extent under a better state of things; but, owing to the badness of the roads, which prevent their getting a ready market for their supplies, they can scarcely be said to cultivate the land at all. Yet, such is the natural fertility of the soil, that the crops are very abundant; and in good years they so far exceed the wants of the inhabitants, that the peasantry do not take the trouble to reap the more distant fields, but merely clear such as are in the immediate neighbourhood of their respective villages. How important to these people, in every point of view, would be the ordinary facilities for commerce! What a motive for industry, and most probably what an improvement in the national character, had they the means of turning the produce of their fields to account. \*As it is, the habit of allowing the precious fruits of the earth to be wasted, because no immediate profit can result from securing them, must be full of mischief to the proprietors, and to the peasantry, inducing general improvidence and carelessness. Let us hope that in the course of improvement, which seems rapidly advancing in foreign countries as well as in our own, the commerce of Spain will be greatly increased, and the produce of Old Castile, Leon, Estremadura, and Andalusia (said to be the finest corn-countries in the world), will at length be turned to rich and profitable use. Latterly we have begun to import corn from Bilbao, Santander, and other ports in the north of Spain; and in 1831, we obtained 158,000 quarters from that country. The supplies brought to Bilbao are, however, principally from a distance of 130 or 140 miles: and owing to the badness of the roads, and the deficient means of conveyance, the rate of carriage advances enormously when there is a brisk demand.

The only port of Southern Europe from which any considerable quantity of grain is to be had, is Odessa, a flourishing port of Southern Russia, situated on the north-west coast of the Black Sea. All the products brought down the Dniester and the Dnieper rivers are exported from Odessa; but owing to the cataracts and shallows of those rivers, which make their navigation dangerous, a large proportion of the corn is conveyed to Odessa by land, and this by a less expensive method than might be supposed. Carts laden with corn, and drawn by oxen, are to be seen slowly wending their way towards Odessa, in parties of about one hundred and fifty together. The time chosen is that in which the peasantry are not occupied with harvest work; and as the oxen are pastured at night, no time is unnecessarily lost during the journey.

Two kinds of wheat are shipped at Odessa, hard wheat and soft; the latter is the most abundant, and is the only kind that finds its way to this

country. The hard wheat is a very fine grain, chiefly sent to Italy for making maccaroni and vermicelli.

Contrary to the practice of the northern ports, the voyage from Odessa is generally made during the winter months; but at all seasons it is a long and uncertain voyage. The reason for preferring to make it in winter is, that in summer the wheat is almost sure to heat during the voyage especially if it has not been shipped in the best order. Sometimes this heating has gone to such an extent, that the wheat has been dug from the hold of the vessel with pickaxes. The winter voyages usually commence before the end of October, for, in autumn and winter, the navigation of the Black Sea becomes dangerous. Free trade gets over all difficulties.

Looking beyond Europe, we find that exports to a considerable amount are sometimes made from Egypt, a country greatly enriched by the annual deposits of mud from the river Nile, and bearing, with very little assistance from the husbandman, three or four crops every year. In Lower Egypt, sowing begins as soon as the waters subside, the seed being merely scattered over the land, and left to sink into the soft earth by its own weight, or trodden in by cattle driven over it for that purpose. This generally takes place in November; in February the fields are green, and in May the harvest takes place. The quantity reaped is very variable, but the pacha informed Mr. Bowring that he had exported in one year 630,000 quarters, producing on an average about sixteen shillings per quarter.

Thus in the present day, as in the time of the Pharaohs, the neighbouring nations may go down to Egypt to buy bread. Stores of corn are still laid up, and a singular method is adopted to secure them from theft. It seldom happens in Upper Egypt that there is any roof to cover the grain; nor is a covering necessary, as rain is scarcely ever known to fall; but the corn being collected into a heap, is stamped all round the foot of the heap with the impression of a large wooden seal, so that nobody can touch the pile without deranging the impression.

It might have been expected, from the fertility of the soil and the beauty of the climate, that Syria would have had an overplus of corn, and be able to export it to other lands; but so great is the want of agriculturists and labourers, that the fields lie comparatively waste. "Regions of the highest fertility remain fallow; and the traveller passes over continuous leagues of the richest soil, which is wholly unproductive to man. Nay, towns surrounded by lands capable of the most successful cultivation are compelled to import corn for the daily consumption, as is the case at Antioch, in whose immediate neighbourhood the fine lands on the borders of the Orontes might furnish food for hundreds and thousands of inhabitants."

From our distant possessions in South Australia, it appears that sufficient corn is now raised, not only to supply the wants of the colonists, but to allow of exportation.

(*To be continued.*)

#### THE CHIMPANZEE.

THE Chimpanzee inhabits Western Africa, from the River Gambia to the limits of Benguela, a tract including about twelve degrees of latitude on each side of the equator. Its height, when full-grown, seems to be at least five feet; some of the older writers say six or seven, which, from what we know of the Sumatran Orang, seems not improbable; the skin of a specimen

in the Museum of the Zoological Society measures about four feet. It is clothed with long black hair, harsh and coarse, but somewhat glossy ; thinly scattered on the breast and belly, as well as on the limbs : that on the forearm points upwards. The hair of the head is divided in the middle, falling down on each side, and forming large whiskers on the cheeks. The eyes are lively, deep-set, and hazel-coloured. The face, ears, and hands are naked, of a dark-brown colour, except the muzzle and palms, which are pale copper-coloured. The lips, which are large, wrinkled, and very moveable, are furnished with a thin white beard.



Many travellers in Western Africa have noticed these highly-interesting animals, ascribing to them faculties and habits which might well startle our credulity, did not modern observations on youthful specimens, which have been brought to England, render them highly probable. One of the earliest, and at the same time most sober of these accounts, is that of Andrew Battel, an Englishman, who was taken prisoner by the Portuguese in 1589, and sent by them to Angola; where he spent many years. In his narrative, published in "Purchas's Pilgrims," he says, "There are two kinds of monsters common to the woods of Angola : the largest of them is called Pongo, in their language, and the other Enjocko. The Pongo is, in all his proportions, like a man (except the legs, which have no calves) ; but he is of gigantic height. The face, hands, and ears of these animals are without hair ; their bodies are covered, but not very thickly, with hair of a dunnish colour. When they walk on the ground, it is upright, with the hands on the nape of the neck. They sleep on trees, and make a covering over their heads to shelter them from the rain. They eat no flesh, but feed on nuts and other fruits ; nor have they any understanding beyond instinct. When the people of the country travel through the woods, they make fires in the night, and in the morning ; when they are gone, the Pongos will come and sit round it till it goes out, for they do not possess sagacity

enough to lay on more wood. They go in bodies and kill many negroes, who travel in the woods. When elephants happen to come and feed where they are, they will fall on them, and so beat them with their clubbed fists and sticks, that they are forced to run away roaring. The grown Pongos are never taken alive, owing to their strength, which is so great that ten men cannot hold one of them. The young hang upon their mother's belly with their hands clasped about her. Many of them are taken by shooting the mothers with poisoned arrows." The same writer asserts, that on the death of one of these animals, the survivors cover the body with leaves and branches of trees. Purchas adds, in a note, that Battel had informed him, in private conversation, that he had known a young negro who had been carried away by the Pongos, and lived a whole year in their society. On his return he reported that they had offered him no harm, and that they were of the stature of ordinary men, but much thicker and stouter.

The latest notice of the habits of the Chimpanzee in a state of nature is by Lieut. Sayers, who obtained possession of a young one in 1838, which he brought to England. He concludes that it ascends trees only for food or for observation; from the negroes he learned that "they do not reach their full growth till between nine and ten years of age; which, if true, brings them extremely near to the human species; as the boy or girl of West Africa, at thirteen or fourteen years old, is quite as much a man or woman as at the age of nineteen or twenty in our more northern climate. Their height, when full grown, is said to be between four and five feet: indeed, I was credibly informed that a male Chimpanzee, which had been shot in the neighbourhood, and brought into Freetown, measured four feet five inches in length; and was so heavy as to form a very fair load for two men, who carried him on a pole between them. The natives say that, in the wild state, their strength is enormous; and that they have seen them snap boughs off the trees with the greatest apparent ease, which the united strength of two men could scarcely bend. The Chimpanzee is, without doubt, to be found in all the countries from the banks of the Gambia in the north, to the kingdom of Congo in the south; as the natives of the intermediate parts seem to be perfectly acquainted with them. From my own experience I can state that the low shores of the Bullom country, situated on the northern border of the River Sierra Leone, are infested by them in numbers quite equal to those of the commonest species of Monkey. I consider these animals to be gregarious; for when visiting the rice-farms of the Chief Dalla Mohammadoo, on the Bullom shore, their cries plainly indicated the vicinity of a troop, as the noise heard could not have been produced by less than eight or ten of them. The natives also affirmed that they always travel in strong bodies, armed with sticks, which they use with much dexterity. They are exceedingly watchful; and the first one who discovers the approach of a stranger, utters a protracted cry, much resembling that of a human being in the greatest distress. The first time I heard it I was much startled; the animal was, apparently, not more than thirty paces distant; but had it been but five, I could not have seen it, from the tangled nature of the jungle; and I certainly conceived that such sounds could have only proceeded from a human being, who hoped to gain assistance by his cries, from some terrible and instant death. The native who was with me laid his hand upon my shoulder, and pointing suspiciously to the bush, said, 'Massa, Baboo live there!' and in a few minutes the wood appeared alive with them; their cries resembling the barking of dogs. My guide informed me that the cry first heard was to inform the troop of

my approach, and that they would all immediately leave the trees, or any exalted situation that might expose them to view, and seek the bush; he also showed evident fear, and entreated me not to proceed any further in that direction. The plantations of bananas, papaws, and plantains, which the natives usually intermix with their rice, constituting the favourite food of the Chimpanzees, account for their being so frequent in the neighbourhood of rice fields. The difficulty of procuring live specimens of this genus arises, principally, I should say, from the superstitions of the natives concerning them, who believe they possess the power of 'witching.'”\*

Several specimens of this interesting animal in its infancy, have at various times been brought to Europe, and the observations made on their manners in captivity have uniformly shown it to possess a very high degree of intelligence of a peculiar character, great docility, and an affectionateness mixed with playfulness, far removed indeed from the character of the common Monkeys. The most interesting of all these individuals was a male, which lived in the menagerie of the Zoological Society about a year. For a considerable period after its arrival in September 1835, it continued in the best health and spirits, and having survived a winter in our cold and moist climate, hope was entertained that it might be reared to maturity. It died, however, in the following autumn. Several very pleasing accounts have been published of the manners of “Tommy,” from which we select the following:—

“On entering the room in which the Chimpanzee was kept,” observes Mr. Martin, “the first thing that struck the attention of visitors was its aged appearance, and its resemblance to an old, bent, diminutive Negro.



PORTRAIT OF TOMMY.”

“This appearance of age was much increased by a spare beard of short, white hairs, which was spread over the muzzle, and by the deep wrinkles which furrowed the cheeks. It was not until being informed of its age, which, as it proved by its dentition, was in all probability about two years and a half, that a person, ignorant of the natural history of the Chimpanzee, would have considered this specimen in the light of an infant; its actions, however, were those of a child, capable of running about and amusing itself; lively and playful, yet neither mischievous nor petulant; it was alive to everything which took place about it, and examined every object within reach, with an air so considerate and thoughtful, as to create a smile on the face of the gravest spectator.”†

Another zoologist thus describes its manners in detail:—

\* Proc. Zool. Soc. 1839.

† Quadrupeds, p. 382.

" In the Zoological Gardens he occupied a room in the keeper's apartments, in which a large cage was constructed for his accommodation, and which was kept as nearly as possible in a uniform temperature. Two artificial trees had been erected in the cage, and a rope suspended between them, to afford him an opportunity of amusing himself by climbing or swinging ; but unless when commanded by his keeper, to whom he invariably showed a ready and willing obedience, he generally preferred running about the bottom of the cage, or amusing himself with the visitors. When moving quickly his pace was a kind of brisk canter, and unless when his hands were employed in carrying anything, he invariably walked on all-fours, leaning on the knuckles of the half-closed fist, as observed by Tyson and Dr. Traill. At the same time, the entire sole of the hind-foot was brought into contact with the ground in the act of progression, and as the arms were not very much longer than the legs, the body was stooped or bent at the shoulders, though the attitude, nevertheless, partook more of the erect than the horizontal.

" But though, when perfectly free and unrestrained, his most usual mode of progression was on all-fours, Tommy could, nevertheless, adopt the biped pace and station with great ease, when occasion required it. His feet, and particularly his heels, were broader and better adapted for this purpose than those of the Ourang-outan, and in walking upright he was not under the same necessity of stretching out his arms, or moving them to and fro, for the purpose of securing his tottering equilibrium : the soles of his feet, however, were flat, and this circumstance, united to the greater distance and freer movements of his hind-legs, gave his gait a waddling motion, similar to that of human beings whose feet are affected with the same deformity. In many of his other actions, Tommy likewise approximated nearly to the human species. He was, without exception, the only animal we have ever seen that could leap, or jump upon his hind-feet, like man ; and this feat he often performed, both on the floor of his cage, and in descending from his tree, or from the bars of his cage, up which he often climbed for the purpose of seeing over the heads of the spectators. He frequently indulged, too, in a kind of rude stamping dance, perfectly similar to that of a child three or four years old, only that it was executed with greater force and confidence. All this arose from the uninterrupted spirits and buoyancy natural to the infant mind ; he was at all times cheerful, lively, and perpetually in motion, from sunrise to sunset, either jumping, dancing, or cantering about his cage, romping and playing with the spectators, or amusing himself by looking out at the window.

" He did not often climb up his tree, unless at the command of his keeper ; he appeared, indeed, to be upon the whole but an indifferent climber, particularly when compared with the Ourang-outan, and generally preferred the level surface of the ground ; whether it was that his tree was not properly constructed, or that he was too heavy and corpulent : but from his manifest awkwardness in performing this action, and his evident preference of the level surface, it is highly probable, as, indeed, most travellers have affirmed, that the progression and habits of the species are more terrestrial than arboreal, and that they ascend trees, principally, if not solely, in search of food. When ordered to seat himself in his swing, Tommy did so with great good humour, stretching out his foot to some of the company to set him in motion. We observed that he used the right hand in preference to the left, and had obviously greater power and facility of action with this than the opposite member. In the human subject this has generally been

attributed to the effects of education ; but in Tommy, at least, it was a natural action, since he was perfectly unsophisticated in this respect ; and it would be a highly-interesting inquiry to ascertain whether the same preference may not be exhibited in other apes, and consequently how far it may depend upon some necessary and inherent principle of the animal conformation, rather than upon mere education.

" All his actions were those of a human infant ; and though his powers, both mental and physical, were, comparatively speaking, more developed, he had all the gaiety, playfulness, and curiosity of the child, the same innocence, the same gentleness, the same affection, and the same restless, pettish, and inconstant disposition ; even his natural appetites and tastes were similar ; he had the same natural fondness for sweets, the same propensity to eat at all times and of all substances, and equally preferred milk and tea to spirituous and fermented liquors.

" In natural shrewdness and sagacity, however, Tommy greatly excelled the human infant, and, indeed, for that matter, many grown individuals.

.... It is more particularly in interpreting your wishes and intentions from your looks, tones, and gestures, that this animal exhibited the most wonderful quickness of apprehension, vastly superior, indeed, to that of ordinary man, and only equalled by what we observe in deaf and dumb people, whose defect of speech is compensated by this unusual acuteness of observation. We have seen Tommy, on one occasion, when commanded by his keeper to bring him the core of an apple which he had thrown down on the floor of his cage, manifest the greatest anxiety to obey, though much perplexed to discover what it was he was required to do, as he evidently did not comprehend the nature of the order. He moved towards the window, stopped and looked back at the keeper, and then at the company ; perceiving by their looks that he was mistaken, he returned, put his hand upon his swing as if to mount, again looked round to see if he was right, and was manifestly much puzzled what to do ; at length one of the spectators pointed to the core of the apple ; he stretched his hand towards it, looked inquiringly at the keeper, hesitated for a moment till he received the expected nod of approbation, and then lifted and carried it to his attendant without farther hesitation."\*

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#### NINEVEH—THE PALACE.

THE general form, arrangement, and purposes of the apartments, in which the monuments of ancient Assyria have been discovered, were at first involved in so much obscurity, as to be unintelligible. The labours, however, of Mr. Fergusson seem to have thrown light on what was before so obscure. From his restorations, which, though in some points only conjectural, are supported by arguments of great weight, we are able to form a somewhat distinct idea of an Assyrian palace, and of the public and private life of the monarch who reigned in it. We can do little more, in these pages, than convey an outline of the results arrived at by Mr. Fergusson, referring our readers to his valuable work itself for the reasonings by which they are attained.

The great collection of buildings which constituted the royal dwelling-place was built on a flat platform of masoary, eight, ten, or even twenty yards in height above the surrounding plain. This platform or terrace was, in Assyria, owing to the deficiency of stone, built of sun-dried bricks,

\* Lib. Ent. Kn. "Menageries," vol. i. p. 65.

faced with broad slabs of alabaster; in Persia, however, it was constructed of stone or marble. Its surface was not of equal elevation in all parts, but terraces of different levels sometimes were formed on the great superficies. Access to the platform from below was obtained by one or more flights of steps, which led up from the plain, not by a direct advance, but laterally; sometimes by one, sometimes by two series of two flights each, the first flight receding from, the second approaching, a central point.

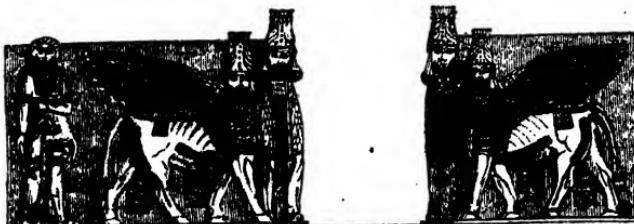
The object of this arrangement was twofold, and is easily understood on inspecting the ruins. The first was to admit of the front being adorned with sculpture; the second depended on the circumstance that immediately before the summit of the steps, upon the platform, was placed the throne-room, or hall of audience, in which the sovereign sat on state occasions.

The propyleum, or throne-room, was an isolated building of comparatively small size, containing a single apartment supported by four pillars. The front, and each of the two sides, were pierced with central doorways of massive grandeur, each guarded by a pair of those colossal cherubic forms which we have before described. In an inscription many times repeated on the piers of this edifice in front of the Hall of Xerxes at Persepolis, the hall is called "duwarthim," which, as Colonel Rawlinson suggests, certainly means *door* or *gate*, and is found in nearly the same form in all the cognate languages. "Still," says Mr. Fergusson, "it is not a gateway or entrance in the manner we usually understand this word, but used more as a justice-hall or place of assembly at the entrance or gate of the palace. I have, for instance, no hesitation in identifying this building with the gate which plays so important a part in the story of Esther, under the reign of the very king who built this one,—the gate in which Mordecai sat when he overheard the conspirators, and in which Haman sat when he refused to bow to him, and where Mordecai could not enter when clothed in sackcloth.

Perhaps this will appear yet more clear by a reference to the following passage, in which "to sit in the gate of the king" expresses the highest office of a subject in the court of Babylon.

"Then Daniel requested of the king, and he set Shadrach, Meshach, and Abednego, over the affairs of the province of Babylon; but Daniel sat in the gate of the king." (Dan. ii. 49.)

It is supposed that the throne of judgment was placed against that wall which had no door; that the front entrance, which faced the throne, was reserved for the king or vizier, who sat in state, while the crowd, who came to demand justice or to pay their homage, passed before the centre of the hall before the judgment seat, entering at one lateral doorway and going out at the opposite; and thus these became the principal portals, distinguished by the superior grandeur of their gigantic guardians, or by some other architectural peculiarities.



GATEWAY.

The walls on each side of the grand gateways were adorned with magnificent sculptures. At Khorsabad the propyleum, that stood almost on the edge of the terrace, looking down upon the city below, M. Botta describes as having portals formed by two winged human-headed bulls of nineteen feet in height, crowned with three-horned mitres, and looking outwards. The wall on each side of the portal consisted of great slabs, on which were sculptured in bold relief two similar cherubic forms, rather less gigantic, standing back to back, between which stood a colossal human figure, strangling a lion in his arms.

Beyond the throne-room or "gate," other flights of stairs appear to have conducted the visitor to a higher level, on which the various erections which constituted the true palace were placed. These consisted of suites of apartments, appropriated to distinct purposes, surrounding quadrangular courts. Thus, if we take for an example the palace at Khorsabad, according to Mr. Fergusson's restoration, the eastern angle of the upper platform was occupied by a large quadrangular space, which he calls the Outer Court, about 350 feet long by 200 feet wide. Passing directly across this court, through its length, the visitor came to the palace wall, in which was a narrow gallery or passage, closed by a massive door; the door has disappeared, but the places for its hinges yet remain, and there is a recess in the passage wall to receive its ponderous lock, when it stood open, as it is supposed was usually the case; for the part of the wall behind the door was not sculptured. The portals of the gate were formed, as usual, of two winged human-headed bulls, and the outer surface of the wall on each side was adorned with human figures. The sides of the passage were covered with a double row of strangers bringing tribute to Assyria, with scribes and attendants, accompanied by long inscriptions, recording the successful campaigns of king Shalmaneser, which are repeated at greater length on the walls of the apartment to which this passage is the entrance. The gallery was paved with large slabs of stone, and, as Mr. Fergusson believes, was covered with an arched roof.

Having passed through this covered passage, which was ten feet in width, and fifty in length, reckoned from the door, but eighty-five reckoned from the faces of the guardian bulls at each end—the stranger found himself in another quadrangle, the Palace Court, bounded on the north-east and north-west by the parapet-wall of the platform, which looked down on the plain without the city walls; and on the two opposite sides by the magnificently adorned walls of the palace itself, or the state-apartments of the king. He could not fail to be struck with the splendour of the scene presented here. The various doorways leading to the apartments were guarded as usual by the awful cherubic bulls facing outwards towards the court, while the pylons or great abutments, projecting between the doors, were sculptured with similar forms placed back to back, with their faces turned outwards, or with colossal figures of priests, human and vulture-headed, ministering before the sacred tree, or performing other mystic ceremonies. Above the range of slabs of alabaster sculptured in bas-relief, which extended to the height of ten feet from the floor, the walls were faced with kiln-burnt tiles painted or enamelled in elegant patterns.

Above the height to which these painted tiles extended, which was three or four feet at least above the slabs, we have no certain knowledge of the structure or appearance of the edifice. On Mr. Fergusson's theory, the walls which formed the apartments, constructed of sun-dried bricks and of amazing thickness, were carried up to about twice the height of the slabs,

or twenty feet. “ Above this the top of the wall [which was ten, fifteen, or even twenty feet thick] must either have been paved with kiln-burnt bricks or tiles, or, what is more probable, floored with wood, so as to protect the mud bricks [of which the solid wall was constructed] from the action of the weather. . . . On this platform two rows of dwarf pillars stood, one on the inner, one on the outer edge of the wall, rising to a height of twelve or fifteen feet, more or less. These pillars supported a flat terrace-roof over each wall, composed of mud, and plastered on the upper surface [and carried continuously over all the apartments]; but as no horizontal timber could carry such a roof over a space of thirty-three feet [the width of the principal room], I conceive that all the larger halls had two rows of pillars down their centres, and the smaller ones probably one row; the very narrow ones were almost certainly without pillars at all. The central hall, I conceive, must have had a roof higher than the rest, and trussed to a certain extent, so as to admit into it a sufficiency of light, which it could not receive through the rooms on either side of it.”\*

The idea of such a structure will perhaps be rendered more clear if the reader will suppose himself on the paved summit of the broad wall. The pillars support a flat roof, but the sides are quite open to the light and air; approaching one side, and leaning over a low parapet, he looks down into the apartment beneath, from which one or two rows of columns rise to the roof, which is continuous with, and of the same level as, that which shelters the corridor on which he stands. Across the apartment his eye rests on a similar corridor on the opposite side, which he may reach if he chooses, by walking half-way round, along the bounding parapet. Turning from this view, he crosses the corridor to its outer side, whence his eye looks down without interruption on the court beneath, or, if the wall be an external one, on the edge of the platform at the foot of the palace, and on to the plain beyond, with the broad Tigris winding like a band of silver through its verdant meadows.

A passage in a modern Persian work, the “ Dabistan,” quoted from an ancient one no longer extant, throws light on the structure, and on the curious customs probably connected with it. After alluding to the worship of the seven planets under distinct symbols or images, in a city, which Mr. Fergusson supposes to be certainly Persepolis, the ancient writer says,—“ On each day in the week, in the dress appropriated to each planet, the king exhibited himself from a lofty *tabsar*, or window, fronting the temple of the planet, whilst the people in due order and arrangement offered up their prayers. For example, on Sunday, or Yakshambah, he showed himself clad in a yellow kaba, or tunic of gold tissue, wearing a crown of the same metal set with rubies and diamonds, covered with many ornaments of gold,—from the *tabsar*, the circumference of which was embossed with similar stones. Under this window the several ranks of military were drawn out in due gradation, until the last line took post in the kashudzar, or ample area, in which were posted soldiers of the lowest order. When the king issued forth like the sun from the orient of the *tabsar*, all the people prostrated themselves in adoration, and the monarch devoted himself to the concerns of mankind. The *tabsar* is a place of observation in a lofty pavilion, which the princes of Hindostan call Jahrokah, or lattice window. On the other days the king appeared with similar brilliancy from the other *tabsars*. In like manner, on the great festivals, the king went in choice garments to the temples of the several images, and on his return seated

\* Palaces of Nineveh, &c., p. 271.

himself in the tabsar facing the image of the planet, or having gone to the Rozistan, or Dadistan, devoted himself to the affairs of state. The Rozistan was a place which had no tabsar, where the king seated himself on the throne, his ministers standing around in due gradation.

"The Dadistan was the hall of justice, where, when the king was seated no one was prevented from having access to him; so that the king first came to the tabsar, then to the Rozistan, and lastly to the Dadistan."

The curious passage above quoted from the "Dabistan," happily illustrates, as we venture to think, one or two allusions in the Song of Solomon.

"My beloved is like a roe or a young hart: behold, he standeth behind our wall, he looketh forth at the windows; showing himself through the lattice." (Cant. ii. 9.)

"Thine head upon thee is like Carmel, and the hair of thine head like purple; the king is held [*marg.* bound] in the galleries." (Cant. vii. 5.)

In the former of these the admiration of the speaker is excited by the magnificence and elegance of her royal spouse, standing behind the low parapet of the tabsar, and displaying himself (*marg.* flourishing) through the Jahrokah, or lattice window. In the second, we may suppose the king to be in the tabsar of the hareem apartments, arrested, and, as it were, spell-bound, by the beauty of his bride, of whom he has caught sight as he looks down. Perhaps, indeed, from the expression, "*our* wall," in the former passage, the allusion there also is to the tabsar of the hareem, or its court, rather than that which looked abroad upon the world; for though the seclusion of females among the Jews was not so absolute as among the more oriental nations, the bride of Solomon would scarcely have an opportunity of gazing on him when he showed himself to the thronging populace.

#### DIVISION OF LABOUR.

OBSERVE the accommodation of the most common artificer or day-labourer, in a civilized and thriving country, and you will perceive that the number of people, of whose industry a part, though but a small part, has been employed in procuring him this accommodation, exceeds all computation. The woollen coat, for example, which covers the day-labourer, coarse and rough as it may appear, is the produce of the joint labour of a great multitude of workmen. The shepherd, the sorter of the wool, the wool-comber or carder, the dyer, the spinner, the weaver, the fuller, the dresser, with many others, must all join their different arts, in order to complete even this homely production. How many merchants and carriers, besides, must have been employed in transporting the materials from some of those workmen to others, who often live in a very distant part of the country! How much commerce and navigation in particular; how many ship-builders, sailors, sail-makers, rope-makers, must have been employed, in order to bring together the different drugs made use of by the dyer, which often come from the remotest corners of the world! What a variety of labour, too, is necessary, in order to produce the tools of the *meanness* of those workmen! To say nothing of such complicated machines as the ship of the sailor, the mill of the fuller, or even the loom of the weaver, let us consider only what a variety of labour is requisite in order to form that very simple machine, the shears, with which the shepherd clips the wool. The miner, the builder of the furnace for smelting the ore, the feller of the timber, the burner of the charcoal to be made use of in the smelting house, the brick-maker, the layer, the workmen who attend the furnace, the mill-

wright, the forger, the smith, must, all of them, join their different arts in order to produce one pair of shears. Were we to examine, in the same manner, all the different parts of his dress and household furniture, the coarse linen shirt which he wears next his skin, the shoes which cover his feet, the bed which he lies on, and all the different parts which compose it, the kitchen-grate at which he prepares his victuals, the coals which he makes use of for that purpose, dug from the bowels of the earth, and brought to him, perhaps by a long sea and a long land carriage, all the other utensils of his kitchen, all the furniture of his table, the knives and forks, the earthen or pewter plates upon which he serves up and divides his victuals, the different hands employed in preparing his bread and his beer, the glass window which lets in the heat and the light, and keeps out the wind and the rain, with all the knowledge and art requisite for preparing that beautiful and happy invention, without which these northern parts of the world could scarce have afforded a very comfortable habitation, together with the tools of all the different workmen employed in producing these different conveniences: if we examine, I say, all these things, and consider what a variety of labour is employed about each of them, we shall be sensible, that without the assistance and co-operation of many thousands, the very meanest person in a civilized country could not be provided even according to what we very falsely imagine the easy and simple manner in which he is commonly accommodated. Compared, indeed, with the more extravagant luxury of the great, his accommodation must, no doubt, appear extremely simple and easy: and yet it may be true, perhaps, that the accommodation of a European prince does not always so much exceed that of an industrious and frugal peasant, as the accommodation of the latter exceeds that of many an African king, the absolute masters of the lives and liberties of ten thousand naked savages.

All these advantages arise from the division of labour. For if each man were to make his own clothes, and build his own house, and construct his own tools and household utensils, he would not be able to do any one of these things so well as if he had devoted his whole time and attention to one of them. Each trade requires more study and practice than he would be able to bestow upon it: so he would probably be clumsy and awkward at all.—SMITH.

But there is another benefit of the division of labour, apart from the superior skill acquired by each man's pursuing one trade. It is this. In a great variety of cases, nearly the same time and labour are required to perform the same operation on a larger or on a smaller scale—to produce many things, or one, of the same kind.

For instance, suppose a number of travellers proceeding through some nearly desert country, such as many parts of America, and journeying together in a large party for the sake of mutual security: when they came to a resting-place for the night, they would be likely to agree among themselves, that some should unlade and fodder the cattle, while others should fetch firewood from the nearest thicket, and others water from the spring; some in the meantime would be occupied in pitching the tents, or erecting sheds of boughs; others in preparing food for the whole party; while some again, with their arms in readiness, would be posted as sentinels in suitable spots, to watch that the rest might not be surprised by bands of robbers. Now, but for such an arrangement, each man would have to go both to the spring for water, and to the wood for fuel—would have to prepare his own meal with almost as much trouble as it costs to dress food for the whole—

and would have to encumber himself with arms while performing all these tasks, lest he should be suddenly attacked by an enemy.

There is, perhaps, no one instance that displays this particular benefit of the division of labour more than the establishment of the post-office for the conveyance of letters. It makes very little difference of trouble, and none of time, to the postman, whether he carries one letter, or a whole parcel of letters, from one town to another ; and yet, but for this contrivance, each person would have to send a messenger on purpose whenever he wanted to write to a friend at a distance.

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#### MOUNTAIN PASSES.



The vast barrier formed by an extensive chain of mountains would shut out the countries on either side from all communication with each other, were it not for certain gaps, or breaks in the line, whereby a passage is obtained over this colossal wall. Such openings are called *Passes*, and are so frequent, that in the Swiss portion of the Alpine chain alone there are not less than fifty.

In travelling up these passes, the gradual change in climate, scenery, and produce, which takes place in a day's journey, is very interesting. At

first the slopes are covered with corn, ripe, perhaps, for the harvest, and the warmth is that of midsummer; further on the crops are green, and scarcely yet in ear; a little higher up the pass, the corn gives place to the dark and gloomy pine-forest. Beyond the forest, the vegetation becomes extremely scanty, though even on the edge of the glacier, bright flowers peep out during the short summer. But as the top of the pass is gained, vegetation disappears, or is only seen in the dry lichen on the rock. The air becomes intensely cold, and the whole scene is one of wintry desolation.

The above engraving represents a remarkable pass across the Swiss Alps, called the *Gemmi*. The summit of this pass is more than seven thousand feet above the level of the sea; and exhibits the wildest and most dreary aspect, being formed of naked rocks, on which not even a lichen is to be seen. From a point very near the summit of the pass, a magnificent mountain view is obtained; Monte Rosa, the second mountain in Switzerland, and the chain of mountains which separate the Canton of the Valais from Piedmont, being immediately in front of the spectator. As the traveller (supposed to be coming from the Canton of Berne) descends into the valley, his path is along the narrow ledge of a precipice of fearful depth, where the rock is all but vertical. Here is formed one of the most extraordinary of the Alpine paths, said to be constructed by the Tyrolese. It is a shelf or groove, cut in the face of the wall of rock, and varying from three to five feet in width. It descends in a zig-zag manner down the rock, and is scarcely broad enough to allow a mule to pass. The road



is protected by a low wall, but it is, nevertheless, a fearful thing to travel along so narrow a shelf, with a wide abyss yawning before you. Over this pass, and along this remarkable road, invalids are constantly carried to the hot springs at Leuk, a small hamlet situated on an elevation greater than that of the highest mountains of Great Britain. Sick and infirm persons are carried on men's shoulders in a sort of litter, and sometimes have their eyes bandaged, that the terrors of the situation may not shock their nerves.

The sublime scenery of mountains is seldom visited in winter by persons capable of describing it. A French writer, however, who travelled at that season in the Pyrenees, has given a few powerful sketches. He

describes the snow-storms as being exceedingly violent, and the force of the wind in many of the depths tremendous. There is a proverb among the mountaineers, that in these passes "the son never waits for the father, nor the father for the son," meaning that the strong instinct of self-preservation absorbs every other feeling in those moments of danger. The following passage will convey some idea of the nature of the scenery :— "At Mont Louis the mountains draw closer together, and increase in height; you enter a narrow passage, which is frightful from the dimensions of its forms, and the irregularity which distinguishes it. The road is cut out on the side of the rocks at one-third of their height, and allows room for one mule at most. Above are inaccessible heights, below are torrents, and beyond are other mountains connected with those round which you are riding. The scene is most diversified. Sometimes you rise and seem to command the abyss, at others you descend and seem to have it over your head. Sometimes, following the windings of the defile, you come into an obscure enclosure, apparently without an outlet, then suddenly doubling a point, you discover an unexpected and immense prospect; vast amphitheatres of dazzling snow, black pines, and a succession of mountains, which crowd together and lock into each other. The confusion of cubic and broken masses of limestone, blocks of granite, the schistus detached in slabs or broken into little flakes, added to the loud roaring of the rapid torrents, the disorder of the winds and of the compressed and rent clouds, afforded a complete picture of chaos."

The Port of Puymaurin, one of the most dangerous of the ordinary passes, was traversed by the same writer in stormy weather. On approaching the mountain on the side of which the port is situated, a walk of two hours through a powerful wind, accompanied by a dry cutting snow, was only preparatory to the more severe weather to be encountered in the pass. At a place called Portez, he stopped for refreshment, and was so completely benumbed that he did not for a long time recover his sense of feeling. Again on the road, his sufferings were less than in the morning, from being already accustomed to the cold wind, and the hour being that of noon. As he proceeded he noticed pauses in the wind when there was no other motion than the silent fall of the snow. "These," he says "were the intervals of which I took advantage to look about me; but they were soon interrupted; the wind suddenly burst forth with unexpected fury, rolled the clouds, and drove them into the recesses; then carrying away the snow which was fast falling, and that which already lay upon the ground, it raised it like the waves of the sea, or drove it forward like the foam upon the waters. The dreariness of these moments it is impossible to describe. The changes of forms, the entirely new position of the snow, the unexpected arrangement of the clouds, the frightful noises, were most remarkable. During one of these moments I was surprised by a wonderful scene. On reaching the interior summit of the port, I turned round and beheld before me an immense succession of valleys displayed one behind the other. The clouds extended to the farthest line of this horizon; but all at once, while those which were over my head were dark and thick, those in the background became light, and I perceived at a great distance the country from which I had come perfectly illuminated by the sun, and apparently enjoying the most perfect calm."

Such are some of the wild and terrific features of mountain scenery, among which the traveller, humbled by a sense of danger, and awed by the majesty of nature, can scarcely fail to recognise the wonder-working power of the Divine Hand.

COMMON BORAGE (*Borago officinalis*).

THIS bright azure blossom rears itself from the heap of rubbish on the waste places of our land, but is not a very common plant there. \*It is far more often one of the ornaments of the cottage garden ; and rightly is it planted, for it is one of the flowers in which bees especially delight, and they are said to derive more nourishment from it than from any flower which blows. The brilliant blue petals, with their prominent stamens, open to the sun in June and July. The whole plant is covered with rough stiff hairs, and the young buds are enclosed in cups of a reddish tinge. The Borage has rather an unpleasant odour. The French call it *Borrage*, and both their name and ours are corruptions of the old word *Corago*, which was taken from *cor*, the heart, because of its cordial qualities. In days when old proverbs were in daily use, one of the common adages recorded the supposed virtues of this plant—"I Borage bring courage;" and the old naturalists, from Pliny downwards, affirm very confidently, that it is efficacious in dispelling sadness. Thus Burton says :—

"Borage and Hellebore fill two scenes,  
Sovereign plants to purge the veins  
Of melancholy, and clear the heart  
Of those black fumes which make it smart."

The young leaves were either boiled, or used as salads, for this purpose, though their flavour is anything but agreeable ; and the flowers steeped in

wine were found to be very invigorating. The tissues of the plant contain gum, and it may therefore be used as a demulcent. It also possesses nitrate of potash, and, when burnt, will emit sparks with a slight explosive sound. It is thought to be a native of Aleppo, but it has become naturalized now in most European countries. The garden species are very easy of culture, and we have one kind from Persia, another from Numidia, and a third from Corsica. The Persian species has pink flowers, but the others have brilliant blue blossoms. Borage still forms an ingredient in the drink called "cool tankard."

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### INDUSTRY.

THE world, in which we have a being, and all things around us, remind us of the continued necessity of labour: for though the earth, by the blessing of the Almighty, produces food sufficient for man, and the various animals that inhabit it; yet, without labour, it would soon become a wilderness, covered with weeds, briars, and thorns.

Besides food and clothing, our nature requires that we should also provide shelter against the inclemency of the weather; these are continual calls upon us for self-exertion, which contribute as much to our happiness as to our health.

Moderate labour promotes the free circulation of the blood, and carries off disorders, which indolence would occasion; the labouring man eats his bread with an appetite to which the idle and voluptuous are strangers; his sleep is sweet, and his rest undisturbed; he is unacquainted with care, and his life is tranquil, if governed by a due sense of religion.

Industry is rewarded in many ways: "The hand of the diligent maketh rich. He that gathereth in summer is wise; but he that sleepeth in harvest causeth shame." (Prov. x. 4.)

"He that would thrive, should rise by five;" and, as Poor Richard observes, "Himself should hold the plough or drive."

"The difference between rising at five and seven in the course of forty years, supposing a man to go to bed at the same time he otherwise would, amounts to twenty-nine thousand hours, or three years, one hundred and twenty-one days, and sixteen hours, which will afford eight hours a day for exactly ten years: so that it is the same as if ten years were added to our lives, in which we could command eight hours a day for our improvement in useful things."

But, besides lengthening, industry sweetens life; the habitation of the industrious man is comfortable and clean, and his careful wife is truly his counterpart—she is the same in her family as he is in his business, always employed, mending and making the most of their garments.

When any good work becomes habitual, it goes on easily and agreeably; for we are, by nature, so much the creatures of habit, that we had need to look well that our habits are good ones.

Difficulties in this life, however, must be expected, and they are even necessary to quicken us to exertion. A persevering principle of self-support is honourable to a man, however humble his situation in life may be; it raises him to a state of respectability in society, and cannot fail to be crowned with its deserved reward.

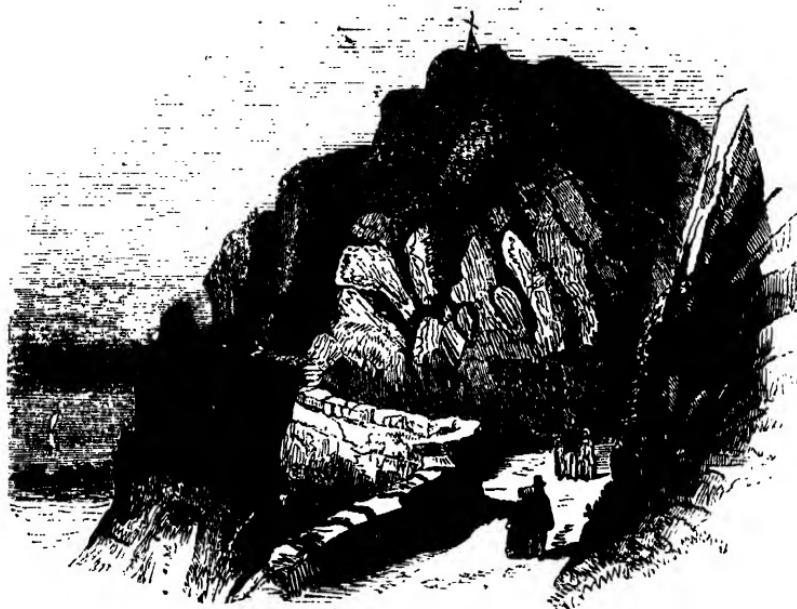
A determined resolution is half way towards the accomplishment of our object.

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A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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SEA-SIDE PLEASURES.—No. II.



CAPSTONE HILL.

THE favourite promenade of visitors to Ilfracombe is on the side of Capstone Hill. The little town is built in a valley, that runs for awhile parallel to the sea, a range of hills rising like a wall between it and the rocky coast, and thus sheltering it from the fierce cold breezes from the north and north-west, that prevail so greatly here, especially in winter. The newer parts of the town are arranged on the landward slope of the valley, forming handsome terraces on its steep side, and commanding those fine views of the sea that are so much admired over the seaward range of hills.

In this range there is but one interruption, but one natural way of access to the shore. For the hills, though they present inviting verdant slopes on the valley side, are externally the most abrupt and rugged precipices, being cut down, as it were, perpendicularly from their very summits to the wash of the tide. At one point, however, there is an exception to the continuity, where a little brook, the Wilder, that trickles through the upper part of the valley, finds its way to the sea. A narrow cove, with a beach of small pebbles, fringed on all sides with masses of rock projecting in strong angles, bears the name of Wildersmouth, from the rivulet that spreads over, and oozes through, its shingles.

The bounding hill-range, which on the left of the cove attains no great elevation, rises on the right into a large, somewhat conical hill, known as the Capstone. It is an enormous mass of shale; in some parts very friable and rotten, in others more compact, with occasional narrow veins of white quartz running through it. The upper and inner portions are covered with turf, and afford pasture for a few sure-footed sheep that hang and climb with unconscious security in places where a false step would plunge them headlong. But in other parts, and especially on the side that overlooks the little cove of Wildersmouth, the sides are awfully perpendicular and even projecting, and the broad faces of the grey rock are here particularly majestic and picturesque. With considerable labour, availing itself skilfully of the natural facilities of the rock, a broad road has been scarped round the seaward-side of the hill, extending from the back of Wildersmouth round to the eastern extremity, and sending off branch roads in zigzag directions, by which the lofty summit may be gained. To a newcomer these tracks seem not a little dangerous, for though they are guarded by low parapets here and there, they are everywhere so steep, often so slippery, and in some points approach so close to the yawning edge of the perpendicular precipice, that the blood beats with a quickened energy as we ascend, especially if we are accompanied by children. But a few weeks' residence rubs off the edge of this sensitiveness, and we wonder after a little while that we could have associated danger with what appears so commonplace a matter.

But no frequency of repetition avails to prevent our appreciation of the beauty and interest of this charming promenade. The crowds of persons who frequent it sufficiently proclaim its power to please. On a beautiful summer evening we may see the visitors not only thronging the walks, and filling the comfortable seats that have been let in so numerously into the solid rock, but studding the steep sides from the summit to the water's edge, on ledges, and points, and slippery projections, wherever there is standing room. And truly this bold headland commands some noble views. To see the sun set on such a calm evening as I have mentioned is very fine; the clouds piled, like mountain upon mountain, about the horizon, all brilliant as he sinks among them, like an oriental monarch into his bed of gold and gems; and then, having hidden his person from our view, proclaiming who is behind by the gilded edges, almost too bright to gaze on, that fringe them; the broad expanse of blue water just broken into a ripple by the breath of the western breeze, awakened as the sun goes down, and reflecting the glowing radiance of the sky, like a great causeway of light reaching across its bosom from the spectator to the horizon:—this surely is a magnificent sight, behold it where and when we may; and it is seen to unusual advantage from the elevated promenade of Capstone Hill. The spectators linger on the sight, every face turned towards the west; though the glit-

tering splendour has changed to rich hues of crimson and orange, and these in their turn have faded to a ruddy brown hue, that is already leaving the western quarter and creeping round towards the north, and will not quite leave the horizon all through the night, until it brightens in the eastern sky with the rays of morning.

On a clear sunny day it is very pleasant to wind along the rocky path, resting at intervals on the convenient seats, or pausing to enjoy the beauties presented by different points of view. As we ascend the western side, we may stand at the parapet and look over the precipice on the beach of Wildersmouth below. Perhaps the tide is out, and the long ledges of rock are exposed, alternating with little spots of shingle. The bathing machines are drawn down to the water's edge, and the singularly-attired priestesses of the bath are carrying out little girls in flannel gowns, and ducking them in the wave. Ladies are speckling the grey rocks with their gay dresses and parasols as they sit in the sun, and merry children are sailing their tiny boats in the pools, or digging up the pebbles with their toy-spades.

We proceed, and gradually open the dark, iron-bound coast of North Devon, as far at least as the Bull Point, a bluff promontory, black and frowning, that projects far into the sea. Far out upon the horizon appears Lundy Island, like a band of blue ribbon, dark and palpable. As we wend farther round, we descry Worms Head, a distant mountain, the terminating point of a long line of coast, stretching away upon the northern horizon. This is the opposite side of the Bristol Channel, and those hills that we can just discern, rising range beyond range, are the mountains of South Wales.

But if we turn our eyes to the scene round about, we shall find much to admire. The varying effects of light and shadow on these great breadths of angular rock; the inclination of their strata, at an angle of  $45^{\circ}$  to the horizon; the fissures that run directly across these, some filled with the quartz deposits, others gaping—the greasy gleam of the shale in some places, the singular light-bay tint in others, that makes one think the sun's rays are falling on the spot, and are clouded elsewhere—may all claim a passing notice. Or we may find objects of interest in the plants, that leave not even our rocky cliffs quite barren. In spring, and lingering on even into early summer, the sweet and delicate tufts of primrose grow in profusion on the sloping turf, and in the hollows and clefts. The fleshy, glossy leaves of the scurvy-grass, hot and pungent, are seen in many spots, and the tufts of thrift are gay everywhere. The kidney-vetch, varying from light-yellow to cream-white, the bird's-foot lotus, and the bladder-campion, are very abundant; samphire adorns the precipitous sides with bunches of dark-green succulent leaves, flowering late in the season; the curiously-cut leaves of the buckhorn plantain form radiating crowns of foliage over the minor clefts; and ivy all the year round spreads an ample drapery of graceful foliage over the otherwise bare rock, especially in those aspects where the rays of the sun can seldom reach, and where flowers scarcely love to grow.

If we trace our way up one of the winding paths to the very summit, we shall be rewarded by the wild grandeur of the view. At one point a corner of the track comes to the very verge of the cliff, and here a short iron rail is placed as a guard. Few would pass this without a moment's gaze of admiration at the precipice, a hundred and fifty feet in height, and perfectly perpendicular that is just over against us, or a glance at Wilders-

mouth far beneath. The wheat-ear twits and flies over the edges of the cliff as we disturb him, and the rock-pipit may be seen perched on some projecting rock; while at the top numerous agile wagtails are running over the breezy down among the sheep that are grazing and bleating there.

And here we are at the summit, nearly three hundred feet above the level of the sea. A flag-staff has been rigged on this point, and around the knot of rock on which it stands there are seats facing various directions. Seaward the view embraces the coasts already mentioned; but the horizon is, of course, more distant, and the range of sight more ample. The numbers of craft of all sorts, continually coming and going, add much to the interest of this scene. If we turn and look inland, a prospect equally beautiful, but of very different character demands admiration. From the west round by the south to the east a verdant amphitheatre extends, bounded by hills of various form and elevation, and diversified with woods and cultivated fields. The peaks called the Torrs, the rounded elevated down of Langley Cleve, and a curious, somewhat isolated conical peak known as Carn Top, that always reminds me of Mount Tabor, are the leading eminences to the west and south-west. Then gentler slopes sweep away along the south line, with the town spread out as in a map, occupying the bottom. To the eastward the noble mountain-mass of Hillsborough, presenting a bluff headland to the sea, nearly five hundred feet in height, and Rillage Point, running out in a long sharp spit behind it, terminate the view; but between us and the former is the harbour of Ilfracombe, with its shipping and its fishing craft, and perhaps a steamer lying at the pier; and Lantern Hill, another almost isolated peak of inferior elevation, crowned by its ancient lighthouse, and facing its opposite neighbour the giant Hillsborough, the joint guardians of the harbour mouth. And thus we have gazed over a semicircle, and are brought round to the channel again.

If now we descend to the principal promenade and stand on that side which faces the Welsh coast, there stretches down from our feet to the water's edge a rough, irregular slope of rock, about fifty feet in perpendicular height, broken into broad shelves and wall-like descents, and cleft with deep narrow chasms up which the sea shoots and boils with a tremendous uproar. Steps rudely cut in the rock give easy access to the ledges at different elevations, and on fine sunny days these are favourite spots with the ladies, who scramble down and seat themselves with their books or their netting on the little rocky perches by the hour together. When there is a heavy swell in from the north or west, these stations are in more than wonted demand; for the incoming sea rushing upon the stony barrier, dashing up to a great height in impotent fury, and breaking into a cloud of spray and foam that sprinkles the beholders even far up on the heights, is a sight well worth seeing.

I explore this rocky region with other objects. The strata of grey shale and slate projecting at a prominent angle to the horizon, produce innumerable angles and narrow fissures; and these, wherever they occur below the level of the highest tide, retain the sea-water with which they are filled, after the tide has retired. These are what are called rock-pools or tide-pools, a most productive field of research to the littoral naturalist. In this particular locality, from the projecting angle of the strata being towards the northern sky, the pools contained in their angles are particularly shadowed, no ray of the sun ever penetrating them. Hence they are more

than usually favourable for the growth of sea-weeds, corallines, and zoophytes, which do not thrive in a strong light.

But it is only those pools that occur at a very low level which afford the most interesting and the least common sorts both of plants and animals. Such as are covered in all common conditions of the sea, and are exposed only at the lowest spring-tides, perhaps not half-a-dozen times in the year, and then only for an hour at a time, are well worth examination, and they will be pretty sure to contain treasures.

A few weeks ago I obtained here a pretty and interesting zoophyte, which I will describe. My ordinary plan is to search for the rarer sorts of red sea-weeds, and to detach with a hammer and chisel a portion of the rock to which they are fixed, so as to bring them home in a growing state. Then having put them into a glass vessel of sea-water, I examine carefully about their roots for the curious animals that usually occur in great variety and profusion there.

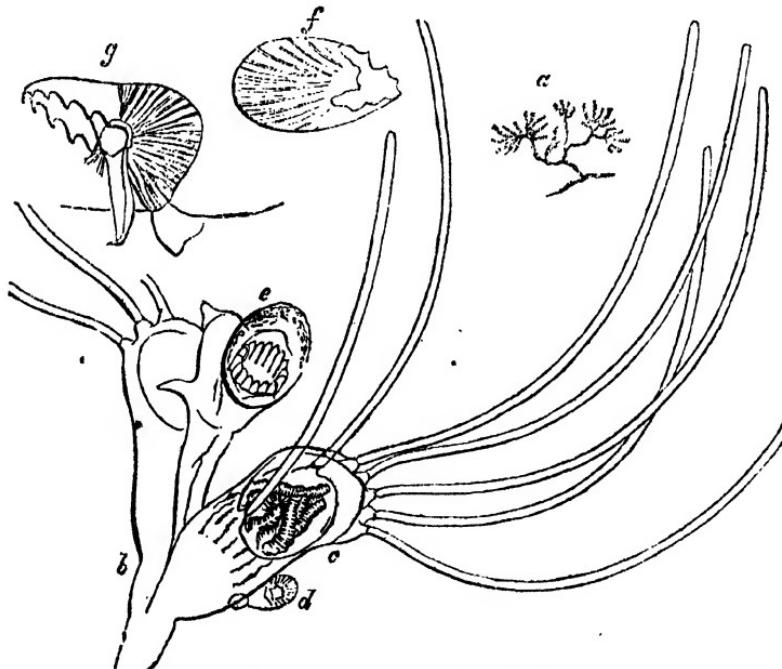
Attached to the side of one of the sea-weeds near its base was, on the occasion referred to, a small but interesting parasite, the Ciliated Coralline (*Cellularia ciliata*). To the naked eye it appears like a minute shrub, composed of numerous branches rising to about half-an-inch in height. With the microscope the branches are seen to be set with a number of transparent cells, somewhat like a wine-glass in form with the rim oblique. They are set alternately on opposite sides of the branch. From the higher and outer side of the rim, spring five long and slender spines gracefully curved, which are each affixed by a joint to a tubercle on the rim. A sixth spine, exactly similar, springs from a little below the margin on the outer side,\* and a seventh from the middle of the inner rim. In my specimens, these spines were of great length; on some of the older cells I have seen them four and even five times as long as the cells. The spines grow after the cells are formed; for on the same branch may be seen oval cells not yet opened, yet containing the polypes, without the least appearance of spines; others on which they are just budding; others on which they are short but distinct; and so on in all intermediate stages of growth, through those in which they are perfect in length and number, to those near the base of the branch, from which the polypes have died out, and from whose margin the spines have been either partially or wholly broken off. The polypes that inhabit these cells have about twelve tentacles, but I have not been able to see one in a state of expansion beneath the microscope. They remain contracted within their cells, their tentacles wrinkled up and pressed together, and showing no voluntary motion, except now and then a spasmodic contraction, or a slight shifting of some of their parts. Their transparency, however, permits the intestines to be perfectly visible, and the contents of these, of a yellowish colour, are often seen whirled round and round with a rapid movement, doubtless by the action of internal *cilia*.

But the most singular chapter in the history of this polype is the presence of some curious appendages which it has in common with a few more species of the same family. On the outside of some (not all) of the cells in this species, there is a little tubercle near the bottom, to which is articulated, by a slender joint, an organ, which has been aptly compared to the

\* Dr. Johnston (Br. Zooph. i. 335), says, "on the *inner* side;" but I am sure this is a mistake. The perfect transparency of these creatures often renders it difficult to determine on which side of the glassy surface any given point is. By delicate focusing, however, I have distinctly proved this spine to originate on the *outside*, as indeed was, *a priori*, more likely.

naked head of a vulture. It has a beak with two mandibles, of which the lower alone is moveable, opening and shutting like that of a bird, but with a far greater width of gape; for the lower mandible can be opened till it extends in the same line with the upper. The upper mandible is furnished with five strongly-projecting teeth on each edge; the lower has a single tooth at its point, which fits into the notch between the terminal pair of the upper. The whole of the back of the head is wrinkled transversely.

The motions of this strange appendage are in keeping with its curious structure. The whole head ordinarily sways to and fro upon the slender joint of the poll, at intervals of a few seconds; but besides this motion, which is even, though rather quick, the lower mandible, which commonly gapes to its utmost extent, now and then at irregular intervals closes with a strong sudden snap, much like the snapping of a turtle's jaws, and presently again opens and leisurely resumes its former expansion. The muscles which move the lower mandible are distinctly seen, occupying the position of the palate, and extending back to the inner surface of the skull, if we may use such terms for an organization so remote. These motions are highly singular to witness, and one can scarcely look upon them without ascribing them to an active volition in the animal.



*a. Cellularia ciliata*, natural size; *b.* a portion of a branch (magnified 200 diameters); *c.* a cell containing the contracted polyp; *d.* the bird's head appended to it; *e.* an immature cell; *f.* the bird's head more enlarged, seen from beneath; *g.* the same viewed sidewise.

But curious questions arise in connexion with these birds' heads. Are they a part of the organization of the polyp? If so, why are they found attached to some cells, and not to others? why to some specimens, and not to others? and why are some species of a genus furnished with them,

while others, essentially the same in every other respect, are destitute of any such appendages?

Anatomical examination does not throw any light on these questions. The animal within the cell appears to be organically independent of the bird's head, for as Dr. Reid affirms, and as I have myself witnessed in another species, the latter continues its movements for a considerable time after the polype has been dead. Dr. Johnston suggests, that the use of the organ is to grasp and kill passing animalcules, which then may be drawn into the cell by means of the ciliary currents of the tentacles; and this seems to me not improbable, and receives confirmation from the toothed structure of the beak, which, though strongly marked, I have not seen noticed.

I have not at all entered into the structure of the polype itself, in the preceding description; for the specimens that I have as yet observed were not in sufficient vigour to allow me to have a sight of one at work. It is only under very favourable circumstances that these sensitive creatures will display their beautifully-delicate organization; in nine cases out of ten, or even more, you will find all the polypes forcibly contracted within their cells, and pertinaciously refusing to protrude themselves until they die.

This deficiency, however, is supplied in the following notes, which I soon after had an opportunity of making on a kindred species.

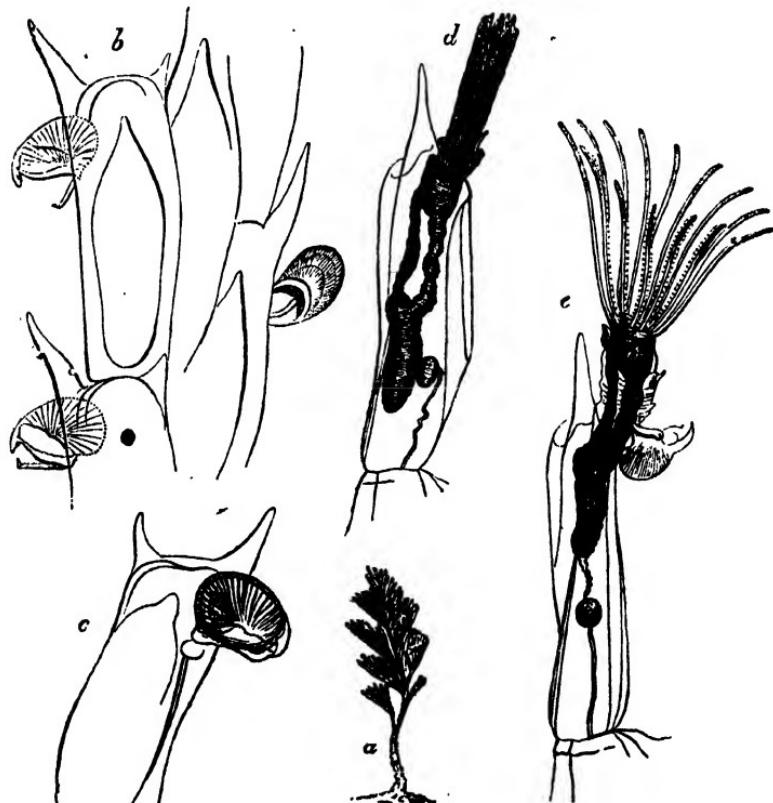
In one of the same shallow pools near the base of Capstone Hill, I took several beautiful specimens of one of the prettiest of the Polyzoan polypes, *Cellularia avicularia*. Well does it deserve the name of Bird's-head Coralline given it by the illustrious Ellis, for it possesses those curious appendages that resemble the vulture's head in still greater perfection than the preceding. All these specimens of mine were most thickly studded with them, not a cell without its bird's head, and all see-sawing, and snapping and opening their jaws with the most amusing activity, and (what was marvellous) equally active on one specimen from whose cells all the polypes had died away, as in those in which the polypes were protruding their lovely bells of tentacles.

The polypidoms were distinctly visible to the naked eye, and attracted my attention before I touched them, while yet in their native pool; though I did not know what they were until I examined them to better advantage. Some of them stand an inch and a half in height, and are about two-thirds of an inch in widest diameter. The cells are set in longitudinal series, two or three rows abreast, and closely adhering; the branchlets thus formed divide *dichotomously* (that is, into two, and each of these into two more, and so on), and so make broad fan-shaped branches, which are segments of funnels: and the peculiar elegance of this zoophyte consists in the mode in which these ultimate branches are set on the stem, viz., in a spiral turn, so that the effect is that of several funnels set one within another, but which yet are seen, on turning the whole round, to compose one corkscrew band of fans. (See fig. a.)

The stem ascends perpendicularly from a slender base which is attached to the rock, or to the cells of a *Lepralia*, which encrust the rock; the midmost part of the spire is most expansive, whence the diminution above and below is pretty regular. The general colour, while alive, is pale buff, or sometimes orange, but the cells become nearly white in death.

When examined microscopically it is, however, that the curious organization of this zoophyte is discovered, especially when examined in full health and vigour, with all the beautiful polypes protruded and

expanded to the utmost, on the watch for prey. It seems to me a poor thing to strain one's eyes at a microscope over a dead and dry polydium, as it does to examine a shrivelled and blackened flower out of a herbarium; though I know well that both the one and the other are often indispensable for the making out of technical characters. But if you want to get an insight into the structure and functions of any of these minute animals, especially such as are so transparent that all the offices of life are discernible in active operation; or if you want to be charmed with the perception of beauty, or delighted with new and singular adaptations of means to ends; or if you desire to see vitality under some of its most unusual and yet most interesting phases; or if you would have emotions of adoring wonder excited, and the tribute of praise elicited to that Holy Being who made all things for his own glory,—then take such a zoophyte as this, fresh from his clear tide-pool, take him without injury done by violently tearing him from his attachment, and therefore detach with care a minute portion of the surface rock itself, and then drop him, with every organ in full activity, into a narrow glass cell with parallel sides, filled with the purest sea-water, and put the whole on the stage of your microscope, with a power of not more than 100 linear, at least for



a. *Cellularia avicularia*, natural size; b. a few cells, magnified and viewed externally; c. a cell, viewed internally; d. a cell viewed laterally—the polype protruding; e. the same—the polype expanded.

the first examination ;—I greatly mistake if you will not confess that the intellectual treat obtained is well worth, ay, ten times more than worth, all your trouble.

The cells of the Bird's-head Coralline are oblong, shaped somewhat like a sack of corn, with a spine ascending from each of the upper corners. (See figs. *b.* and *c.*) Each stands on the summit of its predecessor in the same row, and side by side with those of its fellow rows, in such an order that the top of one cell comes opposite the middle of the one beside it. The top of the cell is rounded and appears imperforate, but we shall presently find an opening there. The broad side that faces inwardly has a large elliptical transparent space occupying nearly its whole surface, which, from its well-defined edges, I was long tempted to think was really a great aperture, though delicate manipulation appeared to give a very subtle surface to it: this, as I subsequently found, is covered with a very thin and elastic membrane, and answers a peculiar end. Just below one of the spines that crown the summit of the cell, on one of the edges, rather on the interior than on the exterior, is situated a little tubercle, to which is attached, by a very free joint, a bird's-head process, in all essential particulars agreeing with that of *Cellularia ciliata*, which I have already described. The lower mandible in this case is, however, set farther back, and the upper is destitute of those tooth-like serratures that characterize it in the kindred species. The motions are exactly the same in both cases. I observe that sometimes the place of the bird's head is occupied by an oval or pear-shaped body, which is probably an early stage of its development; and when perfectly formed there is much difference of size, some of these curious organs being twice as large as others on the same specimen.

Now let us come to the polype itself. It is when we get a good *lateral* view of a single inhabited cell, that we obtain a knowledge of the structure of the tenant. The summit of the cell is then seen to protrude diagonally towards the inner side (*i. e.* towards the axis of the spire), a tubular mouth, which is membranous and contractile. When the animal wishes to emerge, this tubular orifice is pushed out by evolution of the integument, and the tentacles are exposed to view, closely pressed into a parallel bundle (see fig. *d.*): the evolution of the integument that is attached at their base goes on till the whole is straightened, when the tentacles diverge and assume the form of a funnel, or rather that of a wide-mouthed bell, the tips being slightly everted. (See fig. *e.*) They are furnished with a double row of short *cilia* in the usual order, one set working upward, the other downward. Their base surrounds a muscular thick ring, the entrance to a funnel-shaped sac, the substance of which is granular, and evidently muscular, for its contractions and expansions are very vigorous and yet delicate. Into this first stomach passes, with a sort of gulp, any animalcule, whirled to the bottom of the funnel by the ciliary vortex, and from thence it is delivered, through a contracted but still rather wide gullet, into an oblong stomach, the lower portion of which is obtuse. An extremely attenuated duct connects this, which is probably the true stomach, with a globular rather small intestine, which is again connected by a lengthened thread with the base of the cell. By an arrangement common to the ascidian type of the digestive function, the food is returned from the intestine into the true stomach, whence the effete parts are discharged through a wide and thick tube that issues from it close behind the point where the gullet enters. This rectal tube passes upward parallel to the gullet, and terminates by an orifice outside and behind the base of the

tentacles. All these *viscera* are beautifully distinct and easily identified, owing to the perfect transparency of the walls of the cell, the simplicity of the parts, and their density and dark-yellow colour. All of them are manifestly granular in texture, except the slender corrugated tube which connects the stomach with the globose intestine; this is thin and membranous, and is doubtless, if I may judge from analogy, capable of wide expansion for the passage of the food-pellet.

The sudden contraction of the polype into its cell upon disturbance or alarm, and its slow and gradual emergence again, afford excellent opportunities for studying the forms, proportions, and relative positions of the internal organs. In contraction, the globular intestine remains nearly where it was, but the stomach slides down into the cell behind it, as far as the flexible duct will allow, and the thick gullet bows out in front, showing more clearly the separation between it and the rectum, and the insertion of both into the stomach. This retraction is in part effected by a pair of longitudinal muscular bands which are inserted at the back of the bottom part of the cell, and into the skin of the neck below the tentacles. The contraction of these bands draws in the integument, like the drawing of a stocking within itself, and forces down the viscera into the cavity of the cell, which is probably filled with the vital juices. (See fig. d.)

Besides the hind bands there is one or a pair of similar muscular bands, attached on each side of the *front* part of the base of the cell, and inserted similarly into the neck. It was while watching the contraction of these that I discovered, with pleasure, the use of the membrane-covered aperture up the front of the cell. At the moment of the retraction of the viscera into the cell, a large angular membrane was forced outward from the front side, which was protruded more or less in proportion to the degree of withdrawal of the polype, and as the latter emerged again, the membrane fell back to its place. It is evident, then, that this is a provision for enlarging the cavity: the walls are horny and probably almost inelastic; but when the stomach forces the intestine forward, and the thick gullet is bent outward by the withdrawal of the neck and tentacles, the needful room is provided by the bulging out of this elastic membrane, which recovers its place by the pressure of the surrounding water, when the pressure of the fluids within is removed.

P. H. GOSSE.

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#### NINEVEH. THE PALACE—(*continued*).

IN the most recent of all the Assyrian palaces that have been discovered, the south-west edifice at Nimroud, Mr. Layard exposed a hall of curious construction. It is of large size, being 165 feet long, and 62 feet wide, but partially divided by a thick wall running lengthwise down the middle, yet not extending to either end, but terminating at some distance with lateral buttresses facing similar buttresses from the side walls. In each of the four narrow places between the projecting buttresses are found two pedestals or column-bases of stone. Mr. Layard hesitates to consider them as having supported columns, because of their singular and unaccountable position; but Mr. Fergusson has, we think, happily solved the enigma. The broad central wall supported a *tabar*, or gallery of dwarf columns, as did the boundary wall of the apartment; and the connexion between the two was effected by four bridges carried over the narrow parts, and supported by the columns whose bases are still found *in situ*.

To revert to the uncovered edifice at Khorsabad, of which we possess a more clear and connected knowledge than of any other Assyrian building,—we find at the back of the suite of magnificent apartments that constituted emphatically the Palace, a quadrangular court nearly corresponding to that at the front, already described as the Palace Court. Mr. Fergusson denominates this the Temple Court; for at the side of the square opposite to the Palace there is a platform raised six feet above the level of the rest, ascended by a single flight of square steps. On the top was placed an apartment forty feet long and thirty-three feet wide, containing a large square block near the centre of the back wall, probably intended to support an altar. The whole of the edifice is so completely ruined that but little remains to convey an idea of its purpose; a few fragments of sculpture only survive, but these display acts of religious service, and as well as the pavement of the temple, and even the platform itself, were formed of black stone, which makes it highly probable that this was a chapel dedicated to Assaræe. Traces of other rooms exist on the temple platform, which were perhaps vestries or apartments of the priests.

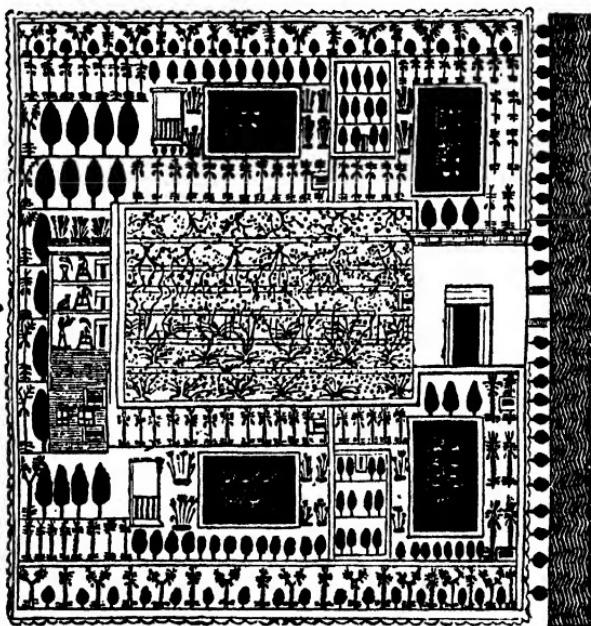
The rear of the temple was close to the edge of the general platform, and was perhaps approached from the plain by stairs at this part; but if it was a chapel devoted to the monarch's private worship, it was probably quite secluded. Returning, then, into its court, we find its south-eastern side formed by a range of small apartments, which may have been assigned to the priests or attendants. These, however, were interrupted by a grand portal, adorned and guarded by a pair of bull-cherubs, which led through a long and broad passage into a fourth quadrangle, the Hareem Court—of smaller dimensions than either of the others, occupying nearly the centre of the platform. In each of the three sides of the court that remain there is a portal, formed as usual, of winged bulls; and the buildings that surrounded this quadrangle were in all probability the apartments of the kings' wives and concubines, so strictly guarded and so jealously secluded from public view in all Oriental courts.

A very large portion of the area occupied by the platform remains unaccounted for. In some parts new excavations would doubtless bring to light new structures, and perhaps modify some of the inferences suggested. But probably over the larger portion of the area nothing would now be found but the platform itself, and the earth which forms a mound over it, undistinguishable from that of the surrounding plain. It is, however, exceedingly likely that extensive gardens occupied some part of the platform. The stories told by the Greeks of the wondrous hanging-gardens of Babylon, which were elevated on terraces as lofty as the city walls, though probably greatly exaggerated in their transmission, show that something of the sort existed; and the paradises or pleasure-grounds of Persia were very celebrated. Several allusions to gardens as accompaniments of a royal palace occur in the Scriptures (see 2 Kings xxi. 18, 26; xxv. 4; Neh. iii. 15; Jer. xxxix. 4; &c.), but the most to the purpose are those in the Book of Esther:—

“ And when these days were expired, the king made a feast unto all the people that were present in Shushan the palace, both unto great and small, seven days, in the court of the garden of the king's palace; where were white, green, and blue hangings, fastened with cords of fine linen and purple to silver rings and pillars of marble: the beds were of gold and silver, upon a pavement of red, and blue, and white, and black marble.” (Esth. i. 5, 6.)

"And the king, arising from the banquet of wine in his wrath, went into the palace garden : and Haman stood up to make request for his life to Esther the queen ; for he saw that there was evil determined against him by the king. Then the king returned out of the palace garden into the place of the banquet of wine ; and Haman was fallen upon the bed whereon Esther was." (Esth. vii. 7, 8.)

The scene of this narrative was Shushan, but we may fairly presume that no greater dissimilarity existed between the plan of that palace and Persepolis than between the latter and Khorsabad, especially when we remember that Persepolis was the actual residence of King Ahasuerus, having been erected by his grandfather and father. The palace-garden then, doubtless, like the palace itself, the harem, or "court of the women," the banquet-house, and all the other edifices, was on the platform, its court being paved with parti-coloured marbles, and furnished with marble pillars, to which were attached temporary curtains. It seems to us not improbable that the quadrangle, denominated by Mr. Fergusson the Temple Court at Khorsabad, may have been the court of the garden, especially since its position, being formed by the rear of the palace and the harem, would be peculiarly suitable for a scene appropriated to privacy, relaxation, and enjoyment. Such it appears were the qualities most prized in a garden :—"A garden enclosed is my sister, my spouse, a spring shut up, a fountain sealed," (Cant. iv. 12.)



EGYPTIAN GARDEN.

In the East, and especially in Syria, it is not at all uncommon at the present day to find a little pleasure garden in the quadrangle surrounded by the apartments of the house. The small dimensions of the spot constitute a less weighty objection with the Orientals than with us, inasmuch as their mode of enjoyment is not by walking about it, but by sitting in

quiet meditative repose, refreshed by the sparkling of water in motion, and by the shadow of green foliage, and delighted by the gaiety and the perfume of the flowers that grow in luxuriant, unrepressed wildness around them. The presence of a small basin in the centre is indispensable, and, where it can be attained, a fountain or a spring is a valuable addition to the garden's charms.

In Egypt the taste for gardens was almost a passion; not only no palace, but no house, having any pretensions to respectability, was unfurnished with one. The inscriptions at Khorsabad expressly declare that it was built "after the Egyptian manner;" and though perhaps this expression admits of some latitude in interpretation, we may still be aided in our conceptions of the probability of a garden, as well as of its form and general appearance, by the annexed engraving and description of a large Egyptian garden, as depicted by contemporary artists.

The garden here represented "stood beside a canal of the Nile, with an avenue of trees between it and the bank, on which side was the entrance. It was surrounded by an embattled wall, through which a noble gateway gave access to the garden. The central space was occupied by the vineyard, surrounded by its own wall, in which the vines were trained on trellises supported by slender pillars. At the further end of the vineyard was a building of three stories, the windows from which opened over the luxuriant foliage and purple clusters, regaling the senses of both sight and smell. Four large tanks of water kept the vegetation well supplied with nutritive moisture; and with the smooth and verdant turf which bordered them, the water-fowl that sported over their surface, and the lotus-flowers that sprang from their clear depths, added a new beauty to the scene. Near the tanks stood summer-houses overlooking beds of various flowers, and sheltered from the sun by surrounding trees. Two enclosed spaces between the tanks, being filled with trees, were probably devoted to some species of particular rarity, or remarkable for the excellence of their fruit. Rows of date-trees and Theban palms alternating with other trees, bordered the whole garden, and environed the vineyard wall."

In the sacred narrative of Esther there is repeated reference to a banqueting-hall, which seems to have opened directly into the palace-garden. (*Esth. vii. 7, 8.*) In the Song of Solomon also the same apartment is mentioned,—“He brought me to the banqueting-house.” (*Cant. ii. 4.*)

The latter was probably the feasting-room which Josephus describes in the following terms, as built by Solomon in his own palace. “He moreover built other edifices for pleasure; as also very long cloisters, and these situate in an agreeable place of the palace, and among them a most glorious dining-room, for feastings and compotations, all full of gold and such other furniture as so fine a room ought to have for the convenience of the guests, and where all the vessels were made of gold.”

At Khorsabad the great south-western hall of the palace, and a small room to the north of it, were largely decorated with emblems proper to such an appropriation. The upper series of slabs in both these apartments represented a great number of guests of rank seated at a banquet, the lower range in the smaller room being devoted to a sporting scene in one of the royal paradises.

In the north-west palace at Nimroud, Mr. Layard found a series of apartments which Mr. Fergusson is disposed to consider as the banqueting-hall and its adjuncts. The decorations do not help us much to this conclusion; for in such rooms as were faced with alabaster slabs the subjects

were almost exclusively priestly figures, bearing the usual symbols ; one of the entrances was adorned by two gigantic figures crowned with garlands, and bearing in one hand an ear of corn, and in the other a young goat. Some of the walls were merely covered with a thin coat of plaster on the sun-dried bricks : on this were sketched figures in outline, which could scarcely be traced ; but Mr. Layard supposes them to have represented the king followed by his eunuchs and warriors, and receiving prisoners and tribute.

Within these apartments were found, however, a number of copper vessels of peculiar shape, which all perished on exposure to the air ; these may possibly have been appropriated to culinary or feasting purposes. It was in these apartments also that our enterprising countryman obtained the curious ivory ornaments, most of which represent Egyptian subjects. It is probable that ivory was much used in the decoration of these rooms, inlaid with metals and coloured glasses, as it was in Egypt, Greece, and Rome.

Ivory was largely used by Solomon and perhaps by his successors, in the embellishment of their houses and magnificent furniture, as the following passages indicate :—

“ Moreover the king made a great throne of ivory, and overlaid it with the best gold.” (1 Kings x. 18.)

“ Now the rest of the acts of Ahab, and all that he did, and the ivory house which he made, and all the cities that he built, are they not written in the book of the chronicles of the kings of Israel ?” (1 Kings xxii. 39.)

“ All thy garments smell of myrrh, and aloes, and cassia, out of the ivory palaces, whereby they have made thee glad.” (Ps. xlv. 8.)

“ And I will smite the winter-house with the summer-house ; and the houses of ivory shall perish, and the great houses shall have an end, saith the LORD.” (Amos iii. 15.)

“ Woe to them that are at ease in Zion, and trust in the mountain of Samaria, . . . . that lie upon beds of ivory.” (Amos vi. 1, 4.)

We shall close this article by quoting Mr. Layard’s vivid and graphic description of an Assyrian Palace, as it was when “ the great king ” trod its marble pavements in the height of his pride and glory.

“ The interior of the Assyrian palace must have been as magnificent as imposing. I have led the reader through its ruins, and he may judge of the impression its walls were calculated to make upon one, who in the days of old entered for the first time the abode of the Assyrian kings. He was ushered in through the portal guarded by the colossal lions or bulls of white alabaster. In the first hall he found himself surrounded by the sculptured records of the empire. Battles, sieges, triumphs, the exploits of the chase, the ceremonies of religion, were portrayed on the walls, sculptured in alabaster, and painted in gorgeous colours. Under each picture were engraved, in characters filled up with bright copper, inscriptions describing the scenes represented. Above the sculptures were painted other events ; the king attended by his eunuchs and warriors, receiving his prisoners, entering into alliances with other monarchs, or performing some sacred duty. These representations were enclosed in coloured borders of elaborate and elegant design. The emblematic tree, winged bulls, and monstrous animals, were conspicuous amongst the ornaments. At the upper end of the hall was the colossal figure of the king, in adoration before the supreme deity, or receiving from his eunuch the holy cup. He was attended by warriors bearing his arms, and by the

priests or presiding divinities. His robes and those of his followers were adorned with groups of figures, animals, and flowers, all painted with brilliant colours.

"The stranger trod upon alabaster slabs, each bearing an inscription, recording the title, genealogy, and achievements of the great king. Several doorways, formed by gigantic winged lions or bulls, or by the figures of guardian deities led into other apartments, which again opened into more distant halls. In each were new sculptures. On the walls of some were processions of colossal figures, armed men and eunuchs following the king, warriors laden with spoil, leading prisoners, or bearing presents and offerings to the gods. On the walls of others were portrayed the winged priests or presiding divinities, standing before the sacred trees.

"The ceilings above him were divided into square compartments, painted with flowers, or with the figures of animals. Some were inlaid with ivory, each compartment being surrounded by elegant borders and mouldings. The beams, as well as the sides of the chambers, may have been gilded, or even plated with gold and silver; and the rarest woods, in which the cedar was conspicuous, were used for the wood-work. Square openings in the ceilings or the chambers admitted the light of day. A pleasing shadow was thrown over the sculptured walls, and gave a majestic expression to the human features of the colossal forms which guarded the entrances. Through these apertures was seen the bright blue of an eastern sky, enclosed in a frame on which were painted in vivid colours the winged circle, in the midst of elegant ornaments, and the graceful forms of ideal animals."\*

\* Nineveh and its Remains, i. 262, *et seq.*

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## OUR NATIVE SONGSTERS.

### THE THRUSH.



ALL nature is full of music. Gentle winds whisper it as they rustle through the summer leaves; and the autumnal gale wakens louder and wilder melodies as it blows down the branches of the forest trees. The trickling waterfall and the pattering rain-drops are musical; and rippling

streams and dashing waves send forth sweet or grand harmonies. All inanimate nature seems pouring forth its anthem from earth to heaven.

But if this is the case with flowing waters and careering winds, how more especially so is it with utterances which convey the inward feeling! How musical are the tones of the human voice, not alone when expressed in song, but when used to tell of gentle emotion, to soothe or to persuade; or when, raised into powerful energy, they flow in torrents of eloquence! And the singing of birds, how sweet is it to the listening ear! These joyous creatures seem made to render the woodland, or the quiet meadow, or the stream side, a scene of repose and recreation from the toils and cares of human life. The beautiful description of Spring given by the sacred writer is as applicable to our country as to Palestine. "The winter is past, the rain is over and gone; the flowers appear on the earth; the time for the singing of birds is come, and the voice of the turtle is heard in our land." We listen to the song with wonder. We know that no human instrument can attain the compass of that strain, or catch the tones of that sweet but irregular melody; that were we to measure our vocal powers with those of the little bird, our voice would be lost in the woodland, which echoes far and near with his music. Like all the sounds of Nature, it has its variations, telling sometimes of joy and gladness, and anon seeming, as it is uttered in the minor key, so plaintive and tender, that we can only compare it to the wailing wind, or to the touching lament of human sorrow. It is well if, while listening to the woodland minstrels, we can find ourselves carried away for awhile from earthly thoughts and memories, and can feel as did the good Isaac Walton. He who looked with such delight on green fields, was gladdened, too, by the song of the birds. "The nightingale," he says, "another of my airy creatures, breathes such sweet, loud musicke out of her instrumental throat, that it might make mankind to think miracles are not ceased. He, that at midnight, when the very labourer sleeps securely, should hear, as I have, very often, the clear airs, the sweet descants, the natural rising and falling, the doubling and redoubling of her voice, might well be lifted up above earth, and say, Lord, what musicke hast thou provided for the saints in heaven, when thou affordest bad men such musicke on earth!"

Among our native birds there are none which have greater powers of song than the Merulidæ, or Thrush tribe, and they are, too, among our earliest singers. The common thrush (*Turdus musicus*) may often be heard singing on a clear day in February, and its song, which acquires greater strength and fulness as the spring advances, is continued, at intervals, till July.\* A very sweet song it is, and one heard by all who live in the country; for the thrush is found everywhere in our woods, and often builds its nest by our very doors, rearing its young in the holly, or arbutus, of the garden, or among the ivy-leaves which screen the house wall. But this song is heard to best advantage when a number of thrushes sing in the evening together, among the trees, when the chorus is so rich and melodious, that all must listen to it with delight. Although the song always partakes of the same character, yet it is sufficiently different in individuals for a good musical ear to detect the singing of some one favourite thrush, which may, year after year, build in the same place. Often, too,

\* The song-thrush is about nine inches in length. The whole upper parts are dark brown; the throat, sides, and breast, pale-yellowish orange: the chin and the belly are white; the whole lower parts marked with triangular spots of dark brown, arranged in chains; the beak and feet are pale brown.

it seems to articulate words quite distinctly. Thus, Mr. Broderip mentions one which, in the course of its singing, expressed sounds which fell on the ear as if it were repeating the words, "My dear—my pretty dear—my pretty little dear"—which sounds were heard by others as well as himself. Mr. Knapp, too, listened to one which frequented a copse, and which, after a certain round of tune, "trilled out most regularly some notes that conveyed so clearly the words 'Lady-bird! lady-bird!' that every one marked the resemblance. He survived the winter," adds the naturalist, "and in the ensuing spring, 'Lady-bird! lady-bird!' was still the burden of our evening song; it then ceased, and we never heard this pretty modulation more. Though merely an occasional strain, yet I have noticed it elsewhere—it thus appearing to be a favourite utterance."

We do not wonder, as we hearken to the thrush's song, that it should always be a favourite one with the poet and the lover of nature. Chaucer, who, as has been remarked, "seems of all poets to have been the fondest of the singing of birds," and who was entranced by them as they sang from the green leaves "with the voice of unghels," seems to have delighted in that of our early bird, when he compared the human voice to its music:—

"Swote his tongue as the throstle's note."

Graham, too, has well described both bird and minstrelsy:—

"The thrush's song  
Is varied as his plumes; and as his plumes  
Blend beauteous, each with each, so run his notes  
Smoothly, with many a happy rise and fall.  
How prettily upon his parded breast  
The vividly contrasting tints unite  
To please the admiring eye! so loud and soft,  
And high and low, all in his notes combine  
In alternation sweet to charm the ear."

The French term the thrushes, *les Grives*, from *grive*, speckled, because of their mottled breast. Our song-thrush, however, is the Mavis of the Scotch, and the Singdrossel of the Germans, the Throstle of our English poets, and the small Misselthrush of some ornithologists. It is sometimes kept in cages for its song, and this may often be heard far off, as it comes sounding through the busy street, when perched on high, at some window, the thrush carols his morning lay. It is said to live for six or eight years in a cage. Perchance its song may soothe some one to whom on the sick couch it brings a tune of green woods. Perchance, to some mechanic, who toils in the busy city, it bears a memory of early days, passed in the country, when he can no longer wander to hear it among the green boughs. From such we would not withhold it; yet surely the caged bird, made as it was with wings to fly, may claim some pity as we remember how all its natural impulses must lead it to yearn for the green shadows, the ready wing, and the notes of its old companions.

Happily for our native thrushes, however, they may sing on, without danger of being seized to contribute to the luxurious diet of the epicure. Several birds of the thrush family are much in request on the Continent for food. The Italians sell them in their markets, and highly prize them, at the period when, having eaten figs and grapes, their flesh is said to be very highly flavoured. Thrushes are very plentiful, during the vintage season, on the southern coast of the Baltic. Klein, who observes that there are, probably, more snares laid for these birds than for any others, mentions that the city of Dantzig alone consumes, every year, eighty

thousand pairs of thrushes. It has been observed, in countries where they feed upon grapes, that, during the season at which the fruits are ripe, the thrushes are easily taken, having perhaps become inactive through repletion.

The common song-thrush was, doubtless, one of the species which were regarded by the Romans as the choicest of feathered game; and many a sweet chorus of song in the trees of the Roman villas and gardens led to the capture of the singers. Extensive aviaries were formed around the ancient city, in which thrushes, blackbirds, fieldfares, redwings, and other birds of this family, were kept during the whole year, that they might be prepared for the table. A vaulted pavilion formed the aviary; this was furnished with perches. A carpet was made of green turfs, often renewed, and branches were strewed over the floor. Here, crowded together in great numbers, the birds were well fed: and, lest some wandering wing might be seen, and thus awaken a longing for the green wood, the windows were so placed as that the little captives might receive light without a sight of the blue sky or the surrounding country. A clear rivulet ran through the aviary, in order to gratify their love of bathing? and here the petted birds sang and ate till they were fitted to gratify the taste of the luxurious Roman. It may be, that the epicure justified his appetite for singing birds on the ground of the invigorating nature of the flesh of the thrushes; for their writers tell of its power to strengthen the frame; adding, that if eaten to excess, it could not injure. Horace, as well as other poets, praises the diet.

As we might infer from the early singing of the thrush, it is an early builder. It usually begins its nest in March, and by the end of April, or the beginning of May, the first brood is ready to leave the nest. Although the thrush seems to have little notion of protecting itself during the winter from the cold, as it usually roosts, with other small birds, in the open hedges, yet it well knows how to shield its eggs and young from the bitter winds of the early spring time. The nest, which is composed externally of moss and fine roots, has a compact inner surface, lined with a coating of cow-dung and decayed wood, so ingeniously worked in together, as that it will even hold water. This structure is usually placed in some low bush, as the honeysuckle or hawthorn, or in one of the garden evergreens, and contains four or five eggs, of a pale blue ground, with small spots of black. Every schoolboy knows the thrush's eggs, for they may be seen continually strung and hung up in the farm-house or cottage, save where the old superstition yet lingers, that if they are kept over Sunday, the housewife will rue it in her broken crockery. So little fear of man has the thrush, that it sometimes builds in places where its nest cannot fail to be seen by the inmates of the house; and instances are known in which the little dwelling has been made in outbuildings where workmen have been daily employed.

Every one who has a garden has good reason to welcome the thrush there, not for its song only, but for its active services. It is true that this bird will not scruple to help itself to the ripest cherry, or to the finest gooseberry on the bough, but on the other hand, no bird is more skilful in ridding the garden of the snails and slugs, which destroy alike the loveliest flowers, and the finest fruits. All the thrushes, as well as the blackbird, make great havoc among the snails; but the missel-thrush, like the blackbird, is not nearly so skilful in shelling them as is the common thrush: and it is said, by Mr. Blyth, to commence its operations by endeavouring

to pull the snail from its shell. This it finds difficult, and it is at last obliged to break the shell as well as it can, so that, as this writer observes, "a song-thrush will devour five or six snails before a blackbird can swallow one." The season in which they consume the greatest number of these animals is in winter, after a night or two of severe weather, when the ground is crisp and hard with frost, and is glittering in the sunbeam, as if strewed with diamonds. A writer in the Magazine of Natural History, says, "In winter, after a night or two sharply frosty, with just a sprinkling of snow on the ground, it is pleasing to stroll beside hedgerows, and see the Turdi\* starting in and out on the face of the hedge-banks, and between the base of the stems of the hedges, in search of snails. If you proceed slowly, a smart reiterated tapping, not loud, but obvious, is heard at uncertain intervals, as the Turdi may find their prey; this they break, not wherever found, but on some stone, fixed firmly, with one face exposed in the bank side, and I think, station themselves below the stone. I have, in my vocabulary, called such stones chosen of the thrushes, the thrushes' chopping blocks." The same writer observes, that the thrushes also consume a great number of snails during July and August, when they explore hedge-rows, orchards, and gardens, with great vigilance. At this season, he remarks that they do not usually break the shell in pieces, but peck a hole through the last and larger coil. In summer, as well as during winter, numerous pieces of snail-shell may be found strewed about in gardens, the remnants of the thrushes' meals. The song-thrush, too, has been seen to break the shell against a barrow, when a large stone was not quite near. It will also feed on the earthworm, and it is amusing to watch a number of these birds, hopping about singly, popping the head forward with the motion peculiar to them of three jumps, and seizing their prey, which they swallow whole. They are also very partial to the beautiful scarlet berries that, during autumn, cluster on the boughs of the mountain-ash.

*(To be continued.)*

### LATIMER AND RIDLEY.

MARTYRS, OCTOBER 16, 1555



HUGH LATIMER was Bishop of Worcester: Nicholas Ridley, Bishop of London. Latimer assisted Cranmer in the composition of the Homilies. Ridley was instrumental in settling the Articles, the Liturgy and the Homilies. They both suffered for the truth on the same day, nearly opposite Balliol College, Oxford.

\* The generic name of the thrushes and blackbirds.

When arrived at the place appointed for their suffering, Latimer said to Ridley, "Be of good comfort, Master Ridley, and play the man. We shall this day light such a candle, by God's grace, in England, as I trust shall never be put out." Ridley's last words were, "Into thy hands, O Lord, I commend my spirit." Latimer, on the other side, as earnestly praying, "O Father of heaven, receive my soul." At last Ridley fell down at Latimer's feet.

We are informed by Dr. Gloucester Ridley, that Bishop Ridley had prepared himself for his approaching death, which a sound judgment and a good conscience made him look upon as a matter of joy and triumph. He called it his marriage, and behaved with as much ease and cheerfulness as ever. At supper he invited Mrs. Irish (the wife of the gaoler), and the rest of the company, to his marriage the next morning. And wishing his sister to be there, he asked her husband, "Whether she could find it in her heart to be there or no?" who answered "He believed she would with all her heart;" at which Bishop Ridley expressed great satisfaction. This discourse melted Mrs. Irish into tears. On seeing her tears, the good bishop comforted her, and said, "You love me not now, I see well enough. For in that you weep, it doth appear that you will not be at my marriage, neither be content therewith. Indeed you be not my friend, as I thought you had been; but quiet yourself; though my breakfast shall be somewhat sharp and painful, yet I am sure my supper shall be more pleasant and sweet." When they arose from the table, his brother offered to watch all night with him, but he would not suffer him, saying, "That he minded (God willing) to go to bed, and to sleep as quietly that night as ever he did in his life."\*

Precepts and Maxims from the writings of Bishop Ridley :—1. Although the hope of His mercy is my sheet-anchor of eternal salvation, yet am I persuaded, that whosoever wittingly neglecteth and regardeth not to clear his conscience, he cannot have peace with God, nor a lively faith in His mercy. 2. All our care is and shall be, by God's grace, to please and serve Him, of whom we look and hope, after this temporal and momentary misery, to have eternal joy and perpetual felicity. 3. We all here be in good health and comfort, watching with our lamps alight, when it shall please our Master, the bridegroom, to call us to wait upon Him to the marriage. 4. What though our troubles here be painful for a time, and the sting of death bitter and unpleasant, yet we know that they shall not last in comparison of eternity; no, not the twinkling of an eye. 5. This death of the Christian is not to be called death, but rather a gate or entrance into everlasting life. 6. Let us comfort our hearts in all troubles and in death, with the word of God: for heaven and earth shall perish; but the word of the Lord endureth for ever.

Latimer's Precepts and Maxims from his sermons and letters :—1. We esteem it to be a great thing to have a kingdom: how much more then should we regard the kingdom which Christ our Saviour offereth unto us which kingdom will be an everlasting kingdom, where there shall be no end of joy and felicity? 2. If we should know the day or the hour at what time He would come, no doubt we should be careless. Lest we should be made careless, this day is hidden from us. 3. Embrace Christ's cross, and Christ shall embrace you. 4. It is not I, without his mighty helping hand, that can abide that brunt: but I have trust that God will help me

\* Wordsworth's Eccl. Biog., vols. ii. iii.

in time of need. 5. If in taking up the cross we must also follow Christ, then we may not cast the same off, until we have carried it with Him unto death.

## THE KING AND THE CAKES.



ONE winter's evening, in the reign of King Alfred, a cottager and his wife were sitting by their fire-side, talking over the sad state of affairs in their dear country. It was a very different cottage to those we see now in England, being more like a mud hut ; and the furniture within was of the roughest and rudest kind. The fire, made of wood, was burning on the hearth, and the seats of the cottagers were two rough stones. There were no windows, and the wind whistled through many a chink in the walls. Yet the cottager and his wife looked happy and contented, save when their brows were shadowed by gloom and sorrow, as they spoke of the Danes, the fierce invaders of their country.

"I wonder what can keep Kenric out so late," at length observed the peasant ; "do you know, wife, that boy is growing up a clever lad ? He is so active and strong, too ; but sometimes I think he does too much, for he is but young. Why, he was out this morning soon after three o'clock with me, and in a little time he will be able to take care of the cows, as well as I can myself."

"I hope he and the cows have not fallen into the hands of those plundering Danes," answered his wife; "it will be a pretty day for you, master, if any thing have happened to them, and then, may be, you'll be sorry for not taking my advice. I tell you again, it is not safe to send the lad with the cows to such a distance. I don't believe you'll ever see cattle or Kenric again, that I don't."

"Softly, softly, good wife," replied the cottager; "if I don't mistake, I hear them now, coming across the common. Yes, that is Kenric's voice; he has just his old father's way of speaking to the poor beasts, bless him!"

In a short time Kenric entered the cottage. He was a fine-grown lad, about fifteen years of age.

"Well, my son, you are late this evening!" exclaimed his father. "I hope the cattle are all safe; but stop, lad, who have you with you?"

"A poor fellow that wants employment, father," replied Kenric. "I met with him on the hill side, and he helped me to call the beasts together; if it had not been for him, I should not have been back this hour."

"Ah, indeed! Well, come forward, my man.—Oh! a stout-looking fellow too;—so you wish for employment do you?"

"I do," said the man; "will you hire me?"

"Let me see what you can do first. I certainly do want another pair of hands with the cattle, but are you accustomed to tend beasts?"

"No, I have not been accustomed to it; but still I doubt not I can make myself useful."

"Useful!" exclaimed old Ulrica, the herdsman wife. "Troth, you would not be very useful, I think, if you cannot mind the cows; why however have you been earning your bread, man, if you can't do that?"

"I have been fighting against the Danes for some years."

"Have you?" said the old man; "well, come, you could not have been doing anything better. Wife, let us give him some supper, poor fellow! Here, come and sit by the fire."

"Why, all his fighting has not been of much use," said Ulrica, as she rose to prepare the simple meal. "The cruel Danes do much as they please; and what is become of the king, too? Oh! dear! England is wretched England now!"

"Ah! what was the last news of good King Alfred?" said the old man.

"It is said he fought bravely in the last battle, but his followers are all scattered now, and he must hide his head, too, for a time."

"Have you ever seen the king?" asked Ulrica, coming forward with some fresh milk for supper.

"I have," answered the man, "and spoken to him also."

This avowal raised the curiosity of the herdsman, his wife, and son; and they gathered round the fire to hear more. The conversation lasted for some time, and Ulrica, finding that Egbert (for that was the stranger's name) disliked the invaders of her country as much as she did herself, made no objection to her husband hiring him as a servant. She however took care to tell him of the duties he would have to perform, and that it would be well for him if he were not found negligent.

All went on very well for some time; Egbert and Kenric together tended the cattle; and though the former was generally very thoughtful, and even melancholy, yet the Saxon boy became quite attached to him, on

account of his gentle manners and kind disposition. Occasionally, too, as they sat on the hill side, or by some sparkling river, Egbert would relate to his youthful companion tales of the battles in which he had fought and the places he had visited. But this was not often; for Egbert was most frequently silent and abstracted. When any mention was made of the Danes, his eye would flash and his colour rise, as if he longed once more to be on the battle-field; but then he only sank into greater despondency.

One evening, Ulrica, in high good humour, set down before the fire some oatmeal cakes she had made for supper, which she pronounced would be capital. She desired Egbert, who was trimming his bow and arrows, to watch them, that they did not burn, and be sure to turn them often, while she went to fetch the milk. The herdsman promised to do so; but so buried was he in his own gloomy reflections, that he totally forgot all about the cakes, and never once looked at them. In a little time Ulrica and her husband came in together. She set down the milk, and went to take up the cakes, when to her horror and astonishment she found they were burnt quite black!

"Why, you good-for-nothing lazy fellow!" she exclaimed with anger; "only see how you have burned my cakes! you are always ready enough to eat them, and yet it is too much trouble to turn them, as you sit there doing nothing! If ever I saw such a sight!"—Poor Egbert said he was very sorry it had happened, but that really he had not thought about them.—"Thought about them! no, but I'll warrant you would think about eating them!" And the old woman would have scolded on much longer had not her husband at last begged she would hold her tongue.

Egbert did not remain very long with the herdsman after this occurrence; but parted in kindness from the old man, his wife, and Kenric.

One morning, as Ulrica was in the cottage, very busy as usual, the old herdsman came in, with an agitated countenance. He looked at once pleased and vexed.

"Wife!" said he, "I have often told thee thy tongue runs too fast, and now I think you will confess it does."

"Well, what's the matter now?" asked Ulrica, in a sharp tone.

"You remember our man, Egbert, and the scolding you gave him for burning the cakes one night?"

"To be sure I do, lazy fellow! well he deserved it! What of him?"

"He was no less a person, Ulrica, than King Alfred himself!"

"King Alfred!" screamed out Ulrica, as she let the bowl in her hand fall to the ground; "oh, husband, what *do* you say?"

"I say that the man I hired to tend the cattle, who had such a scolding from you about your burnt cakes, was Alfred, King of England!"

"Oh, master! what will become of me?" cried the old woman in despair; "well-a-day! he will most surely punish me! Perhaps he will make a law that I am never to speak again—and then what *shall* I do?"

"Why you will be in a bad way then, Ulrica," said the old man, smiling; "but I do not think the king will make such a law as that, for they say he is thankful for the shelter he found in our cottage, and has even had a good laugh with his nobles about the burnt cakes. You see, wife, he was hiding then, but now his head is above water, as one may say; and long may he live to be king over England, God bless him!"

"Only think of his being the king!" said Ulrica, who had not recovered from her astonishment. "Well, it will be a lesson to me for the future; my cakes may burn black before I scold again."

History does not say whether Ulrica kept her word ; but the story has been handed down for more than nine hundred years, a warning to all scolding housewives.

"Thank you, dear aunt," said Florence, as Mrs. Gordon concluded ; "that is a very pretty story ; but do tell us how the king got out of his difficulties."

"He went to a place called Athelney, my love, after he left the herdsman, where many of his brave nobles joined him. The soldiers also came back to him, and Alfred determined once more to fight the Danes. But, wishing to know what sort of an army they had, he disguised himself like a harper, and, taking a harp in his hand, went to the Danish camp. The Danish general was so much pleased with him for playing so well, that little thinking who he was, he begged him to stay with them several days. Alfred did so ; and having seen all he wished to see, and found that the Danes were thinking only of amusing themselves, returned home again. He then put himself at the head of his army, and soon gained a complete victory over the invaders. Peace was restored to England ; and Alfred the Great was one of the best and wisest kings who ever sat upon the English throne."

"I wonder if old Ulrica ever saw him again," said little Kate ; "she must have felt quite ashamed if she did."

"The story shows us, my dear children," remarked Mrs. Gordon, "how foolish and wrong it is to go into a passion about trifles. When anything vexes us we should try to be calm and patient ; to govern our tempers and our tongues. The Bible tells us we ought to bridle our tongues, for though they are little members, they can do much harm. 'Let every man be swift to hear, slow to speak, slow to wrath.' Our daily prayer should be, 'Set a watch, O Lord, before my mouth ; keep the door of my lips.'"

"Aunt," said Florence, after a pause, "why did papa desire us to ask you for this story as we sat under the chestnut-tree ?"

"Because, my love, from this spot you may see the Isle of Athelney, where Alfred rallied around him his faithful nobles, after he left the cottage. Look there, my children, to the right of that distant wood ! do you not see a winding river, peacefully flowing towards the sea ? That is the river Farret, and there—where you see it sparkling, a long way off—is the Isle of Athelney. Another river joins the Parret there, just where the little island lies."

"Then King Alfred once lived here in Somersetshire," said Edward ; "I liked it very much before, but I shall like it better now. How far we can see from this breezy hill ! I hope, dear aunt, we may often come here, and that you will often tell us a story under the chestnut-tree. It is all so very beautiful, and I feel so very happy !"

Mrs. Gordon smiled : "I hope we shall often come here, my happy boy ; and whenever I find you have all been good and attentive at your lessons, I think I shall be able to remember a story for you. And we must learn something also from each story. What is the lesson we have learned today, Alice ?"

"That we are not to speak hastily or passionate to any one, aunt."

"True. Now let me see you all have a race round the hill."

THE  
HOME FRIEND;

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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ENGLAND'S RESOURCES IN TIME OF DEARTH (*continued.*)



MAIZE FIELD.

TURNING now from the Old World to the New, let us inquire concerning the resources of North America, and her power to supply us with corn in the time of need. As far as extent and capabilities of soil are concerned, every one knows that the resources of even our British possessions in that country are almost boundless. It has been well said, "Our colonial wastes are mines of gold: millions of treasures slumber in our unappropriated lands." Canada alone is about six times as large as England and

Wales; and the whole area of our British North American provinces is more than twice as great as that of all France. Of this great extent of land, however, not more than thirty millions of acres are granted, and of these not more than five millions are cultivated. Of the productiveness of this region, we have the following among similar testimony: "So great is the fertility of the soil in Canada, that fifty bushels of wheat per acre are frequently produced on a farm where the stumps of trees, which probably occupy an eighth of the surface, have not been eradicated; some instances of sixty bushels an acre occur; and near York, in Upper Canada, one hundred bushels of wheat have been obtained from a single acre. In some districts wheat has been successively raised upon the same ground for twenty years without manure."\* Montreal, the chief trading port of the St. Lawrence, is the outlet of the greater portion of the produce of Upper Canada.

That the United States of America also possess immense resources for the production of food is well known. A journey across the State of New York affords the most satisfactory evidence of the great natural advantages of this region, of which New York itself is the great outlet.

Around the great chain of the North American lakes, of which Lake Erie is the most southerly, is a vast territory about six times as extensive as the whole of England, containing one hundred and eighty millions of acres of arable land, a large portion of which is of surpassing fertility. It is expected that a vast population will eventually spring up in this attractive region, which has already drawn great numbers to its culture.

The principal corn trade from the United States is carried on in flour, not in grain. The shipments of flour have been very extensive from New York, New Orleans, Baltimore, and other ports. Every kind of flour, whether of wheat, rye, or Indian corn, is inspected by an appointed officer before it is shipped. The size and weight of each barrel is regulated by government, and the inspector ascertains that every barrel contains 196 lbs. of flour, and each half-barrel 98 lbs. He next determines the quality of the flour; the best being branded *Superfine*, the second *Fine*, the third *Fine Middlings*, the fourth *Middlings*. Flour which is not marketable is branded *Bad*, and its exportation forbidden. Maize flour is branded *Indian Meal*, and may be exported in hogsheads of 800 lbs. The inspection takes place at the time and place of exportation, under penalty of five dollars per barrel. Persons altering or counterfeiting marks or brands, forfeit one hundred dollars; and persons putting fresh flour into barrels already marked, or offering adulterated wheaten flour for sale, forfeit in either case five dollars per barrel.

But if it has been so ordered, that an abundant harvest in America should in a very material degree assist England and Ireland in their difficulties; yet it does not appear that we are at liberty to reckon on this aid as constant or lasting. An acute writer on our agricultural resources has the following remarks bearing on this subject: "The great source of error, with regard to the United States, is in judging of it by the enormous extent of its territory, instead of by the number of hands which can be applied to the raising of food. This mode of judging is altogether fallacious; for the amount of labour which can be applied to the soil, is the principal test of production. This is proved by the fact, that we raise nearly as large an amount of agricultural produce in this little island, which is a mere speck, when compared with the United States, as the people of that country raise

\* Butler.

from the whole of their vast territory. A little consideration as to what are the practical difficulties in raising, reaping, thrashing out, and getting to market any considerably increased quantity of grain, will show that this must be the case. In the great corn-growing districts of England and Scotland, that is, in Lincolnshire, Cambridgeshire, and the Lothians, the resident population, though four or five times as thick on the ground as the agricultural population of any of the grain-growing states of America, would be unable to secure the harvest, if it was not for the immense influx of Irish reapers at harvest time. It was only last year that a slight delay in the arrival of the usual bands of Irishmen produced great alarm in Lincolnshire and the Isle of Ely ; and if they had not arrived at all much grain would have been lost. This is the grand difficulty with regard to the cultivation of grain in thinly-peopled countries. There is no difficulty in preparing large quantities of land, as that is an operation which may be spread over several months ; and there is even less difficulty in sowing the land, as one man can sow a great breadth in a single day ; the difficulty is in obtaining the necessary supply of labour to cut down and carry in a fortnight or three weeks the harvest of the whole year." If the want of labourers during the harvest is often felt even in this country, " how much greater must it be in the wilderness of the west, with a climate like that of America, under which each grain-crop ripens simultaneously. The difficulty is so great that no effort is even made to reap much of that Indian corn, which makes such an astounding figure in American statistics. The usual course over thousands of acres is to turn the pigs into this grain, to eat as much as they like ; and this is even done with regard to wheat. A gentleman of our acquaintance saw an immense herd of pigs turned into a magnificent field of wheat of sixty acres, which was thus completely laid waste, according to our European notions."

The above remarks lead us to notice more particularly the qualities of maize or Indian corn, which has been of so much service in Ireland during the season of distress, and which will in all probability continue to be a most important article of commerce. From the partial attempts to cultivate maize in this country, many persons are acquainted with its appearance, and luxuriant growth ; its strong, reedy, joined stems, broad leaves, tassel'd flowers, and large thick ears, plentifully supplied with seeds or grain.

There are several varieties of Indian corn, supposed to arise from difference of climate ; but there is no doubt that America is the native place of the plant ; for there, and in the West India islands, it is found growing wild, and is cultivated to the greatest perfection. The growth of American maize is various, being from seven to ten feet in favourable situations, and in some cases attaining the extraordinary height of fourteen feet without losing any of its productiveness. The value of the grain to America is nearly as great as that of rice to India. It forms a principal food of the inhabitants of the United States, and almost the sole support of the Mexicans. It is also largely consumed in Africa. It is said to be much less subject to disease than our wheat, no such thing as blight, mildew, or rust, being known to the crop. The chief enemies to the maize farmer are insects in the early stages, and birds in the later periods of cultivation.

The increase of this crop compared with that of other kinds of wheat is exceedingly large. In Mexico, where it is the most luxuriant, its productiveness is almost incredible. We are assured that, in some particularly favoured spots of that country, it has been known to yield an increase of

eight hundred for one ; while it is by no means uncommon, where artificial irrigation is practised, to gather from three hundred and fifty to four hundred measures of grain for every one measure that has been sown. In other places where no artificial means are used, forty or sixty bushels are gained for each one sown.

The produce from maize in the United States is less luxuriant than in Mexico, but is very superior to that of other kinds of grain. Where the average crop of wheat does not exceed from fourteen to seventeen bushels, that of maize amounts to from twenty to thirty bushels. In some of the warm and moist regions of Mexico three harvests of maize may be annually gathered, but it is not usual to take more than one. The seed-time is from June to the end of August. In the United States, maize is generally planted about the middle of May, that it may escape frost, and the harvesting takes place a little later than that of wheat. This is an advantage to the American farmer, making it more possible to secure a portion of the crop ; but in all circumstances there is much difficulty in conducting harvest work in a country where the growth and maturity of crops are so rapid.

The culture of maize is very successfully carried out in Georgia. The ordinary increase in good years is from one hundred to one hundred and twenty fold ; but by the best ears being selected for seed, and careful attention to the crops, the corn is increased in size and productiveness, so as to yield two hundred and fifty fold. This result was first produced by a cultivator named Baden ; hence the choice corn obtained by his method is called Baden corn. The common wheat harvest is over in Georgia by the middle of June. The maize is then in a flourishing condition, and is gathered some weeks later.

The maize harvest is very differently conducted to the wheat harvest. When the corn is ripe the ears are plucked off and thrown into baskets : these are again emptied into carts, which convey the store at once to the barn. The stalks are left standing some time longer, and being then cut down near the ground, they are tied up in bundles and stacked in a dry place, being useful food for cattle. The ears of corn are preserved in bins or cages, and are not shelled until they are about to be sent to market. Shelling the corn is easily performed, but is rather a tedious operation. An old blunt sword or a piece of iron hoop is fixed across the top of a tub ; each ear is then taken in both hands and scraped lengthwise smartly across the edge of the iron until all the grains are removed. In this manner an industrious man will shell from twenty to twenty-five bushels per day. Two bushels of ears will yield one bushel of shelled corn. The rude method above described has in some places yielded to a simple machine, which expedites the work.

Of the advantages and uses of Indian corn we have had many notices within the last twelvemonth, but perhaps none have greatly added to the testimony given long ago by Dr. Franklin. He says, "It is remarked in North America, that the English farmers when they first arrive there, finding a soil and climate proper for the husbandry they have been accustomed to, and particularly suitable for raising wheat, despise and neglect the culture of Indian corn ; but observing the advantage it affords their neighbours, the older inhabitants, they by degrees get more and more into the practice of raising it ; and the face of the country shows from time to time that the culture of that grain goes on visibly augmenting."

"The inducements are the many different ways in which it may be prepared, so as to afford a wholesome and pleasing nourishment to men and

other animals. First, the family can begin to make use of it before the time of full harvest; for the tender green ears, stripped of their leaves, and roasted by a quick fire till the grain is brown, and eaten with a little salt or butter, are a delicacy. Secondly, when the grain is riper and harder, the ears, boiled in their leaves and eaten with butter, are also good and agreeable food. The tender green grains dried, kept all the year, and mixed with green *haricots* (kidney-beans) also dried, make at any time a pleasing dish, being first soaked some hours in water and then boiled. When the grain is ripe and hard, there are also several ways of using it. One is to soak it all night in a *lessive* or lye, and then pound it in a large wooden mortar, with a wooden pestle; the skin of each grain is by that means skinned off, and the farinaceous part left whole, which being boiled swells into a white soft pulp, and eaten with milk, or with butter and sugar, is delicious. The dry grain is also sometimes ground loosely, so as to be broken into pieces of the size of rice, and being winnowed to separate the bran, it is then boiled and eaten with turkey or other fowl, as rice. Ground into a finer meal they make of it by boiling a hasty pudding or bouilli, to be eaten with milk, or with butter and sugar: this resembles what the Italians call *polenta*. They make of the same meal, with water and salt, a hasty cake, which, being stuck against a hoe or other flat iron, is placed erect before the fire, and so baked to be used as bread. Broth is also agreeably thickened with the same flour. They also parch it in this manner. An iron-pot is nearly filled with sand, and set on the fire till the sand is very hot; two or three pounds of the grain are then thrown in, and well mixed with the sand by stirring. Each grain bursts and throws out a white substance of twice its bigness. The sand is separated by a wire sieve, and returned into the pot to be again heated and the operation is repeated with fresh grain. That which is parched is pounded to a powder in mortars; this being sifted will keep long for use. An Indian will travel far, and subsist long on a small bag of it, taking only six or eight ounces of it per day, mixed with water. The flour of maize, mixed with that of wheat, makes excellent bread, sweeter and more agreeable than that of wheat alone. To feed horses it is good to soak the grain twelve hours; they mash it easier with their teeth, and it yields them more nourishment. The leaves stripped off the stalks after the grain is ripe, tied up in bundles when dry, are excellent forage for horses, cows, &c. The stalks, pressed like the sugar-cane, yield a sweet juice, which being fermented and distilled makes an excellent spirit; boiled without fermentation it affords a pleasant syrup. In Mexico, fields are sown with it thick, that multitudes of small stalks may arise, which being cut from time to time like asparagus, are served in desserts, and their sweet juice extracted in the mouth by chewing them. The meal wetted is excellent food for young chickens, and the old grain for grown fowls."

As an article of general domestic use, this maize flour appears to be as agreeable as it is economical. Besides ordinary puddings, cakes, rolls, and bread, which are made of it, there is a dish called *mush*, a sort of hasty pudding, which is very much used in America, and which shows the great advantage of this article as a cheap food. Describing this dish, Dr. Bartlett observes:—"I carefully weighed out one pound of this meal, and gave it to a person who understood the cooking of it. In the course of boiling, it absorbed five pints of water, which was added at intervals until the process was complete. The bulk was again weighed, and gave as a result four pounds and a half. Such are the powers of expansion possessed by this

kind of grain. On dividing the mass into portions, it was found to fill four soup plates of the ordinary size, and with the addition of a little milk and sugar, gave a plentiful breakfast to four servants and children." Thus, one pound of maize flour, valued at one penny, gave a substantial breakfast to four persons. This is certainly worth trying in England, and would, no doubt, be soon adopted by numbers, could they obtain the flour. But strange to say, although a large quantity of maize flour is sent to England, there is the greatest difficulty in obtaining any for use. It appears to be kept in the hands of bakers and others, who, no doubt, employ it largely in mixing with wheaten flour, but who deny it to their customers, except at a price equal to that of wheaten flour. The writer has made inquiries at many bakers' shops in London, and also at several corn stores, but has not been able to obtain any of this meal. One individual confessed to having a quantity of it, but refused to sell except at the high price of ordinary flour. It is to be hoped that this will not continue long, but that the valuable grain, which is so calculated to relieve the present distress, will soon be better known and appreciated by the public at large. Let a general demand be excited for maize flour, and the monopoly will soon cease to exist. In large families it would be a great saving to employ this flour mixed with wheaten flour for pastry of all kinds, plain cakes, &c., even supposing any prejudice to exist against its use in bread. But those who have tried it, assure us that bread is much sweeter and better with a portion of this flour; and if we may judge by the bread sold in a few of our shops as Indian-corn bread, we fully agree in that opinion. It is light and wholesome, and does not become dry or stale so soon as ordinary bread.

It should also be remembered that rye meal is an article that may be advantageously used to mix with other flour in time of scarcity. The preference shown in England for white-looking bread prevents the frequent use of this meal, but there is no doubt of its wholesomeness and utility; and by using a certain portion of it, a medium might be attained between the dark-coloured bread of the continent, and our own very white loaves.

In country places we sometimes meet with plain household bread, made from the whole meal of wheat without the separation of the bran. Such bread is far more substantial, and, as it appears, more nutritive and wholesome, than fine wheaten bread. A valuable paper on the nutritive qualities of the bread now in use, has been contributed by Professor Johnston to Blackwood's Magazine, and in it he has proved satisfactorily, that, by rejecting the bran, we lose a large amount of nourishment of the most important kind.

Wheat is well known to consist of two parts; the inner grain, which gives pure white wheat, and the skin, which, when separated, forms the bran. The miller cannot entirely peel off the skin from his grain, and thus some of it is unavoidably ground up with the flour. But by sifting he separates it more or less completely, and thus he obtains his seconds, middlings, &c. The whole meal, as it is called, of which brown household bread is made, consists of the entire grain ground up together—used as it comes from the mill-stones unsifted, and therefore containing all the bran. Thus the finest wheat flour may be said to contain no bran, while the whole meal contains all that grew naturally upon the grain.

The inquiries of Professor Johnston are, "What is the composition of these two portions of the seed (the inner grain or pure wheat, and the skin or bran); how much do they respectively contain of the several consti-

tuents of the animal body ; how much of each is contained also in the whole grain ?"

The answers to these inquiries show the value of whole meal or household bread in forming and sustaining the three principal solids of the human body—fat, muscle, and bone. The following are the more important particulars :—

1. *The fat.*—Of this ingredient a thousand pounds of—

|                     |           |         |
|---------------------|-----------|---------|
| Whole grain contain | - - - - - | 38 lbs. |
| Fine flour          | "         | 20 "    |
| Bran                | "         | 60 "    |

So that the bran is much richer in fat than the interior part of the grain, and the whole grain ground together richer than the finer part of the flour in the proportion of nearly one half.

2. *The muscular matter.*—A thousand pounds of whole grain and of the fine flour contained of muscular matter respectively—

|             |           |          |
|-------------|-----------|----------|
| Whole grain | - - - - - | 156 lbs. |
| Fine flour  | - - - - - | 130 "    |

Thus, of the material out of which the animal muscle is to be found, the whole meal or grain of wheat contains one fifth more than the finest flour does. For maintaining muscular strength, therefore, it must be more valuable in an equal proportion.

3. *Bone material and saline matter.*—A thousand pounds of bran, whole meal, and fine flour contain respectively—

|            |           |          |
|------------|-----------|----------|
| Bran       | - - - - - | 700 lbs. |
| Whole meal | - - - - - | 170 "    |
| Fine flour | - - - - - | 60 "     |

So that in regard to this important part of our food necessary to all living animals, but especially to the young during their growth, the whole meal is three times more nourishing than the fine flour.

Taking the three essential elements of a nutritive food, thus existing in wheat, and comparing their respective amounts in the whole meal and in the fine flour, we find that on the whole the former is one half more valuable for fulfilling all the purposes of nutrition than the fine flour.

"It will not be denied," says our author, "that it is for a wise purpose that the Deity has so intimately associated in the grain the several substances which are necessary for the complete nutrition of animal bodies. The above considerations show how unwise we are in attempting to undo this natural collocation of materials. To please the eye and the palate, we sift out a less generally nutritive food—and to make up for what we have removed, experience teaches us to have recourse to animal food of various descriptions.

"It is interesting to remark, even in apparently trivial things, how all nature is full of compensating processes. We give our servants household bread, while we live on the finest of the wheat ourselves. The mistress eats that which pleases the eye more, the maid what sustains and nourishes the body better."

These important remarks are followed by an allusion to the experiments of Majendie and others, who found that animals died in a few weeks if fed only upon fine flour, but lived long upon whole meal bread. Thus the coarse bread given to prisoners is in fact a mercy to them, for being restricted from all other food there would not be sufficient nutriment in fine white loaves long to sustain life. The nutritive properties of bran are shown

in its effects in fattening pigs, &c. ; and thus this apparently woody and useless material is found to produce valuable results.

Wheat, taken in the natural mixture found in the whole seed, is the most nutritive of all vegetable substances, and is, therefore, when at moderate price, quite as economical as some of the cheaper kinds of grain. It is only when wheat has risen to an unusual price that substitutes are sought for it in inferior articles. According to Liebig, Boussingault, and others, 107 parts of wheat are equal in nutritive power to 111 of rye, 117 of oats, 130 of barley, 138 of Indian corn, 177 of rice, 894 of potatoes, and 1335 of turnips.

Severe as the evils have been to Ireland in the failure of the potato crop, there are many persons who think that much good will eventually result to that country and to our own, from this convincing proof of the uncertainty of the potato, and of its unfitness, on that account, to be the common food of the people. No doubt it is exceedingly desirable that the potato should never be made more than a subsidiary article : for, as above shown, its powers of nutrition are very low compared with wheat and other grain. "Wherever it supersedes bread," says Mr. McCulloch, "the population, though there should be no increased demand for labour, invariably increases ; wages are gradually lowered ; and poverty and its attendant train of evils diffuse themselves over the vicinage. We are not, therefore, of the number of those who regard the potato rot as a manifestation of the Divine wrath, and who suppose that its continuance will be ruinous to the poor. On the contrary, we do not hesitate to say, that, judging of its influence in time to come by that which it has hitherto exercised, we should look upon the total extinction of the plant as a blessing and not as an evil. The transition from an inferior and cheap, to a superior and more costly species of food, might, no doubt, occasion considerable inconvenience in some parts of Great Britain, while in Ireland it would be a matter of much difficulty. But this inconvenience and difficulty, how troublesome soever in the mean time, would be got over in no very lengthened period ; and when the change had once been accomplished, the benefit to the country, and especially to the labouring classes, would be greater than can be easily imagined. It would not, we think, be difficult to show that the gradually extending use of the potato has done more to depress the labourers, or, at all events, to counter-vail those causes that would have raised them to a higher position, than all the other unfavourable influences to which they have been exposed put together. And supposing such to be the case it is a matter for grave consideration, provided (as is indeed most probable) the potato rot should turn out to be accidental and temporary only, whether some restrictions should not be laid on the culture of the root. The tendency to resort to the potato when it is abundant is so very strong, that in the long run it is almost sure to prevail ; but this resort is necessarily productive of so many evils, and places the very existence of a people in such imminent hazard, that no means should be left untried by which it may be averted."

Sentiments like these, coming from such a writer, are worthy our attentive consideration, and we must allow that a total dependence on the potato crop is a great evil. In teaching the Irish and English peasantry to exert themselves earnestly to obtain a better food, it will indeed be another proof of the mysterious working of Providence, by which the temporary sufferings of a part of the nation have been made subservient to the lasting benefit of the whole. May He who has the wills and affections of men within his power, enable us to derive such lessons from the chastisement we have

received, and such motives for industry and thankfulness, as may render a season of deficient food a time of abundant instruction and solid improvement to us all ! and in looking forward to the future may we never forget, that the times and the seasons are in the hands of One, whose blessing miraculously multiplied the food of His followers, causing five loaves to feed "five thousand men, besides women and children," and seven loaves to feed "four thousand men, besides women and children." By the same Divine compassion our harvests may be exceedingly multiplied, and our wants abundantly supplied ; and for our individual comfort we have the gracious promise, that although "the young lions do lack and suffer hunger," yet "they that seek the Lord shall not want any good thing." (Ps. xxxiv. 10.)

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### HOME REFORM.\*



The influence which the homes of the working classes have on the community at large, and especially on the more immediate comfort and well-being of their occupants, gives to this subject its now recognised importance, and its claim on all classes of society to active co-operation in efforts for their improvement.

In our narrow lanes and streets, in our filthy alleys, and in our over-crowded, ill-ventilated, and miserable abodes, whether they be towns or in the country, it is not the health of the inhabitants only which suffers, but a moral pestilence has there its natural source, and fitting place of development. This physical and this moral malaria are not confined to the spots where they originate, but both are wafted abroad by the winds of heaven to pollute and poison whatever falls within their reach, and thus remote portions of the community are visited for the neglect of obligations which rest on society at large.

If any one doubt the importance of the domestic circumstances and habits of the working classes, he has but to examine those records which are open to the investigation of every inquiring person, and he will find

\* Extracted from an Address delivered by Henry Roberts, F.S.A., to the members of a Young Men's Society.

that a large portion of the crime and misery around us may be traced to the condition of the houses, and household relations of the great masses of our population. The manner in which this evil operates is obvious. If a man be unhappy at home, he is not and cannot be happy abroad, although he may plunge into dissipation and vice in seeking a temporary oblivion of his sorrows and their cause. Whilst, with regard to his children, the injurious influence of the habits and example of their home is constantly opposed to the training of the day and sabbath school, and is manifested in after life.

Within the past few years the actual condition of the dwellings of the working classes, and the necessity for their improvement, have been brought prominently before the public. Earnest appeals have been addressed, and many practical efforts have been made, with a view to enforce and promote this important object. The sympathy of Her Majesty the Queen has been graciously manifested, and in an especial manner that of the illustrious Prince Consort, whilst in the same good cause many of the highest rank are enlisted, with the distinguished nobleman who is foremost in promoting every effort for social amelioration.

The Legislature has repealed the duty on bricks and on windows, and passed a Public Health Act, as well as two important Bills with reference to Lodging Houses, all of which measures are calculated to promote the health, comfort, and welfare of the working classes.

Societies have been established and zealously engaged in the erection of model dwellings for the labouring classes. Plans and instructions have been published with a view to facilitate the extension of such efforts, and it is encouraging to know that they are being adopted in many parts of the kingdom.

May we not, therefore, hope that before long a great change will be effected, and that instead of the wretchedness which characterizes the hovels, rather than the homes of thousands around us, commodious, dry, well-ventilated, and healthy dwellings will take their place?

It is obvious that the labouring classes have but rarely the opportunity of improving the *structural arrangements* of their dwellings, and they are compelled therefore to submit to many inconveniences which result therefrom; but there are other evils which it is in the power of the working man to rededy, or at all events to mitigate; and our chief aim is to point out how his own efforts ~~may~~ be best directed to secure the accomplishment of so desirable an object, or in other words to answer the inquiry—What may be done by the working man himself to improve his home?

And here we must begin by insisting that, however much of the physical and moral evils of the working classes may be justly attributable to their dwellings, it is too often the case that more ought in truth to be imputed to themselves. For surely the inmate depends less on the house, than the house on the inmate; mind has more power over matter than matter over mind. Let a dwelling be ever so poor and incommodious, yet a family with decent and cleanly habits will contrive to make the best of it, and will take care that there shall be nothing offensive in it which they have power to remove. Whereas a model house, fitted up with every convenience and comfort which modern science can supply, will, if occupied by persons of intemperate and uncleanly habits, speedily become a disgrace and a nuisance. A sober, industrious, and cleanly couple will impart an air of decency and respectability to the poorest dwelling; while the spendthrift, the drunkard, or the gambler, will convert a palace into a scene of discomfort and disgust. Since, therefore, so much depends on the

character and conduct of the parties themselves, it is right that they should feel their responsibility in this important matter, and that they should know and attend to the various points connected with the improvement of their homes.

The fact that disease is much more common among the poor than among those in better circumstances, and that the average duration of life among the industrious classes is scarcely more (including children) than one-half that of the wealthy, ought surely to arouse the former to some great effort of improvement in order to remove the causes of such direful effects. If the wife or the children of the working man be ill, he incurs expense, sacrifices time and trouble to obtain their restoration to health; but from his want of knowledge he sees not the cause of illness in the absence of cleanliness or ventilation in his apartments, or the presence of dirt or filth in his neighbourhood, sending forth poisonous exhalations, and causing fevers and sickness amongst those who are subject to their influence.

Habits of industry, economy, order, and cleanliness, will do much to remedy existing evils, and to render the most humble cottage an abode of domestic peace and happiness, whilst the improvidence and dishonesty which often lead to the want of punctuality in, or to the non-payment of rent, is an evil which affects not the individual himself alone, but in some degree the whole class. Men of capital are thereby prevented investing their property in improved buildings for those from whom it is difficult to obtain regular payment, and whose frequent appeals to their sympathy and forbearance may diminish considerably the per centage return on their investments.

There can, however, be no doubt that, as a general rule, the best conducted persons obtain better dwellings than their improvident and dishonest neighbours. A good landlord will give the preference and encourage such tenants, whilst the man who, though he be in the receipt of large wages, is a spendthrift or a drunkard, inevitably lives in a state either of embarrassment or of beggarly wretchedness. How great a contrast exists between the home of the man who, earning six or seven shillings daily, spends two-thirds of it at the public house, and that of the hard-working sober labourer, who, though not in receipt of more than eight or ten shillings a week, takes it to his frugal and industrious wife, who contrives to make her husband's home a happy home, and more attractive to him than the beershop or public-house.

Here, then, is the first point to which I would direct your attention, as a means within the reach of every working man who desires to improve his own home.

Avoid the public-house and the beer-shop. Habits of strict temperance and moderation will enable you to provide more home comforts than you are at all aware of. Mr. Porter, of the Board of Trade, has shown that the people of England, Scotland, and Ireland, and chiefly the working classes, tax themselves annually to the extent of 57,063,230*l.*, for the three excisable articles of spirits, beer, and tobacco. It has been computed that among those whose earnings are from ten to fifteen shillings weekly, at least one-half is spent by the man upon objects in which the other members of the family have no share.\* Among artizans, earning from twenty to thirty shillings weekly, it is said that at least one-third of

\* Why should not working people, as a substitute for the public-house and beer-shop, purchase a small barrel of good beer, and drink it at home with their families?

the amount is in many cases thus selfishly devoted. That this state of things need not be, and that if the people generally were more alive to their social duties it would not be, may safely be inferred from the fact that it is rarely if ever found to exist in those numerous cases wherein earnings not greater than those of the artizan class are all that are gained by the head of the family when employed in a department where education is necessary. Take the case of a clerk with a salary of 80*l.* a year—a small fraction beyond 30*s.* a week—and it would be considered quite exceptional if it were found that anything approaching to a fourth-part of his earnings were spent upon objects in which the wife and children should have no share. Any man, whose lot is cast among the easy classes, exhibiting such a degree of selfish indulgence would be pointed at as an example of brutality.

Closely allied to, if not necessarily consequent on, the improvidence which so greatly reduces the working man's available means of support, is the habit of resorting to the pawnbroker whenever by sickness or any other cause he is deprived of work; at such times the man of industry and forethought will be able to draw on his deposit in the Savings Bank, or to claim from his Friendly Society that temporary assistance which will enable him not only to meet the wants of his family, but also to sustain his credit with his landlord, and to maintain that happy feeling of honest independence which ought to be cherished by every working man.

Amongst the removable causes of much physical suffering to the labouring classes, as well as to many in more easy circumstances, is the want of due regard to the air inhaled at every breath—to the quantity of light in the rooms which are occupied—to personal and to household cleanliness—to the purity of the water which is drunk, and to efficient drainage, with freedom from the escape of noxious effluvia.

Were the working classes alive to the great amount of disease, to the numerous deaths, and to the consequent suffering which result from the unhealthy state of the atmosphere breathed in their homes, they would instinctively use the means within their own reach for remedying so great an evil.

*(To be continued.)*

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#### THE FLARE-UP.

GILBERT STEWARTSON was the son of a professional gentleman living in one of the populous villages in the suburbs of London. His father had placed him in a proprietary school established in the immediate neighbourhood of his residence, the head master of which stood eminent alike for his great talents and skilful management of his pupils. He was also an intimate friend of Mr. Stewartson, and himself took a lively interest in that gentleman's family, Gilbert especially having long attracted his notice. As the latter was a boy of considerable ability, and naturally of an amiable and tractable disposition, his father could not fail to hope that, under such circumstances and such favourable auspices, his progress would do honour to himself and his friends.

The commencement fully realized his expectations; there was but one opinion throughout the school, that Gilbert was destined to become a conspicuous character in life. Nothing seemed difficult to him: what other boys laboured to acquire, he conquered with ease. He bore away every prize of his class, and was regarded as a formidable antagonist by his

seniors. All at once, however, the animation and spirit with which he had pursued his studies disappeared : he became indifferent, made progress, as it would seem, because he could not help doing so ; and, though never inferior to others of his age or class, he was not more than equal to them in actual performance. Whether in the first instance the victory had been too easy for him, and the prizes he obtained had therefore a prejudicial effect rather than the contrary ; or whether his companions were not afterwards competent to contend with him, which required but a faint exertion of his faculties, may remain a doubt. He was, however, no vain boy ; he never uttered a word that could be construed into implied superiority over his associates ; but good-natured, generous, and accommodating, his valuable aid and assistance were not only never withheld, but granted with a willingness and grace that rendered them doubly acceptable.



Gilbert was in consequence a favourite with all ; and all too joined in lamenting that he no longer showed the ardour that had formerly distinguished him ; yet no master could complain of him, all that Mr. Morgan could advance against him was, " You don't do what you are capable of doing ;" while to his father he would say, " Compare Gilbert with other boys and his progress is more than fair ; compare him with himself, and he falls far short of what he ought to be." In vain, however, did he, or Mr. Stewartson, or his companions, remonstrate with him ; for so much was he loved by the latter, that Mr. Morgan frequently expressed his belief, that there was not one among them who would not rejoice, even though at his own cost, to see him fill the honourable post of captain, to which his abilities fully entitled him to aspire.

Mr. Stewartson was, as may be well supposed, severely disappointed. At the same time he felt all the delicacy of his situation, and the necessity of exercising the soundest judgment in his conduct towards his son. To create in him a spirit of emulation, when higher considerations had been urged without success, appeared justly dangerous and reprehensible. " If my boy," said he to Mr. Morgan, " is to distinguish himself on any other ground than that of principle and rectitude, let him remain what he is. I had rather be a disappointed father than be congratulated on the possession of a vain-glorious son, who in the exertion of his talents has sought only

his own glory." It was at length determined between himself and Mr. Morgan that the experiment of removing him to another school should be tried,—a determination which was not yet communicated to Gilbert.

Among the boys was one who had lately joined them of the name of Truman, the son of a man who had been exceedingly fortunate in life, and who took a leading part in all public matters, being more distinguished for his energy than his modesty. This youth was older than Gilbert, and possessed talents of the very first order. Very ambitious and persevering, vigorous in constitution as in mind, but self-important, coarse in manner, and overbearing, he soon became a marked boy, but one by no means liked. It was quite evident what rank he must hold in the school, for there was but one who could contend with him with any prospect of success, and that one did not seem disposed either to check him or to measure swords with him.

At the examination at Midsummer, Truman acquitted himself remarkably well,—a circumstance which so inflated his pride that he became almost insufferable. Gilbert had also passed a very fair trial; but Mr. Morgan privately bestowed no other commendation on him than this, that seeing what he had done, it only grieved him that more was not done; while his father avowed his determination to be present no more at the distribution of the prizes.

The holidays were again approaching. Many times before this the boys had jestingly urged Gilbert to give them a "flare-up," which he in the same spirit promised to grant *some of these days*; though when those days should arrive seemed more and more remote or uncertain as the weeks passed on.

Disgusted with Truman, they made a general attack upon Gilbert. "O! do take down that bragging Truman's pride!" was the oft-repeated entreaty. "When are we to have your promised flare-up? it never could be at a better time than now; don't let him run away with the head prize, or with any one of them; for the sake of the school give him a real working, and show him who can be master." But Gilbert heard without any other reply than he had often before given, he would flare-up some day.

It was now within three weeks of the holidays, and everything had been arranged for the examination. Gilbert and his mother had been waiting breakfast some time in consequence of the father of Truman having called upon Mr. Stewartson on some private business, just as they were sitting down to the table. He had been shown into an apartment adjoining that which they were occupying. The door of the breakfast room was open when both gentleman passed through the hall to the entrance, which Mr. Truman had apparently reached when he suddenly stopped, and in the loud and consequential tone peculiar to him said, "I shall not be out of town more than a fortnight, for I shall make it a point to return for the 18th, the public day at the school, you know. I would not be absent, as you may believe, on any account;" then changing his voice into affected pity, he added; "it must be a most mortifying thing to you, that that boy of yours does not exert himself; he has fine abilities I understand, more the pity. I really feel for you—good morning."

The door closed, a minute elapsed before Mr. Stewartson entered, and when he did so, the effect which this speech had had upon him was yet discernible. The painful glow was still on his cheek when he sat down to the breakfast table, and his manner was abstracted; he sighed too as he

took the bread which Gilbert handed to him ; but not a word was spoken by any of the party. Gilbert and his mother had distinctly heard what had been said by Mr. Truman ; and each was actuated by a peculiar feeling.

Mr. Stewartson was the first to break the silence. He had evidently struggled with himself, and had now recovered his composure. He addressed a few sentences to Mrs. Stewartson, and then turning to Gilbert he said—

“ I have agreed to purchase the pony as you wished. You are to have him on trial for a few days, and if you continue to like him, he is yours.”

Gilbert would have said heartily and fervently “ Thank you, father ;” but the word stuck in his throat, when he too most needed to utter it ; he coloured deeply, and the muscles of his face were agitated. Instead of answering, he held his cup to his lips, and attempted to drink though the tea was scalding.

Mr. Stewartson inquired if he had heard what he said.

“ I am very much obliged to you,” said Gilbert ; “ but, if you please —that is, if it makes no difference to you—I had rather wait a little while. When I wish to have the pony, I will tell you, if you will give me leave.”

The manner in which he spoke these words escaped the notice of his father ; not so Mrs. Stewartson—for what eye so quick as that of a fond, and anxious, and sensible mother’s ? What heart so ready at once to define and enter into the feelings of a beloved son, be he what he may, as hers on whom that son has been cradled, and whose early woes have been hushed to repose ? Without directing her attention to Gilbert, she stole a look at him as, rising hastily from the table, he apologized for thus abruptly leaving them on the plea of being too late at school.

Gilbert caught that look, and it gave a sharper point to the feelings which were at war in his breast. As he pursued his way to school, neither his countenance nor his step were his own. His heart ached and his brow was clouded ; there was tumult in the citadel within, but not resolution ; certain pain, but as yet uncertain plans. As he entered the playground, Truman and two or three other boys were disputing about some point relative to the examination, when seeing him advance, one of them appealed to him to decide it.

“ Where is the use of saying anything to him ? ” cried Truman ; “ unless—

‘ Leviathan would pastime take,  
And show the fishes they are nought.’ ”

The pompous tone in which he uttered these words, and the contemptuous expression of his features, touched Gilbert to the very quick. The laugh that followed was not responded by any of the boys, but if any one had had the inclination to notice it, the summons to go into school would have prevented it. The business of the morning passed without any particular occurrence, but it was no small relief to Gilbert when the hour of dismissal came. He had been abstracted and very ill at ease within himself ; his father’s blush of shame—for so he interpreted it—the kindness of that amiable parent in gratifying his wishes even under the smart and mortification of which he had been the cause ; his mother’s glance, and young Truman’s taunt, although least in estimation, all passed in review before him, adding each time fresh pain to his reflections. Instead of going direct to his mother as usual on his return from school, he withdrew himself into his own bedroom. There lay some of the books and papers that would be required

for the ensuing examination. Gilbert was not a boy of hasty impressions, or one who was actuated at any time by mere impulse; his whole character partook of a higher stamp, and excellence lay dormant only under the veil which had too long concealed it. There was a contest within before the binding determination could be formed; a barrier, and a powerful one, too, to be broken down, before apathy could give way to energy, and a nobler course be taken.

He stood with folded arms, his eyes resting on the book, but in reality fixed on vacancy. The voice of his mother, speaking to one of his sisters in her wonted tone of gentleness and love, at that moment reached him. He started. "It shall be so," cried he mentally, his thoughtful attitude resolving itself into one of virtuous determination; "my dear mother, my dear father, you shall find at last that you have a son not unworthy of you."

He cleared his eyes from the dimness which had obscured their usual brightness, took out his pocket handkerchief, which he passed hastily over his face, and commenced putting his papers in order. Who has not beheld with delight the early sun, when after struggling with leaden clouds it burst forth suddenly in all its radiancy, casting a glow of light and happiness on all beneath its beams? So stood Gilbert at that moment. There was no longer sadness in his countenance; a far nobler expression had taken possession of it, and all the vigour of his mind illuminated his features.

Firm, however, as was his resolution, he determined to conceal it from every one. He studied night and day, but so quietly and with such little variation from his usual manner, that nobody with the exception of one person, suspected him, and that one carefully but anxiously confined her hopes to her own bosom.

"Mother," said Gilbert, as he stood at the back of her chair; "you remember, don't you, that the distribution of the prizes is on Wednesday?"

"I do," replied she; "but what then?"

"I have a request to make of you," said he, bending over her: "you will of course be there; will you persuade my father to be present too?" He laid his cheek to hers as he spoke.

Mrs. Stewartson fondly returned his caress. "Certainly I will," replied she, "if you desire it."

"I do very much desire it," answered Gilbert. He uttered these words with such earnestness, that she raised her eyes to his face, in which the sincerity of his words were visibly written. With a mother's tact and tenderness, however, she made no observation to him, but with a smile repeated her promise of exerting her influence with his father.

The task she had undertaken was not an easy one. Mr. Stewartson had been so much disappointed on a former occasion, and so deeply pained by Mr. Truman's speech to him, that for some time he turned a deaf ear to his wife's entreaties. But she was not to be refused; her reliance was strong upon her son, for he had never deceived her; and she respected his request too much to yield to a simple difficulty.

"If it must be so," said Mr. Stewartson at last, "it must;" and a deep sigh followed his consent.

The boys were assembled in the school-room on the important day of examination. Dr. Stephens, the head master of —, a man noted for the severity of his examination and the skill with which he conducted it, was the principal person selected on the occasion. His entrance was hailed with mingled feelings of interest, anxiety, and apprehension. He looked round on

the youthful competitors before him with a kindness that might have inspired confidence, had not each felt too much in awe at that moment of his abilities readily to entertain it.

A profound silence was now established—the examination began. At first there was little to attract any great degree of interest; gradually, however, the subjects became more important, and the answers elicited gave increasing satisfaction. Like an experienced general, the Doctor, having now ascertained the strength of the contending parties, shifted his mode of attack, pressed hard on the most powerful, now urging, now winning them to venture further in advance, till at last the brunt of the action was supported only by two, Gilbert and Truman. Pleased with the abilities displayed by both boys, the Doctor was led on in his examination further than he intended. Truman at length began to waver; it was evident to the judges, if not to the boys generally, that the Doctor had fully sounded his depth; he laboured in his answers, while Gilbert was still at his ease, and seemed to gather power by exertion. The most intense interest was excited throughout the school, nor was surprise at Gilbert the least powerful feeling. Anxiety for his success grew stronger as his answers fed their desire, and many a look of approbation was exchanged between his companions. It is a very small thing that will confirm hope. When Dr. Stephens had finished his examination, those who were nearest heard him distinctly inquire the name of "that boy," pointing to Gilbert. Why could he wish to learn that, if he had not been remarkably pleased with him? And who had not noticed the looks of the Committee present, and especially of Dr. Middleton, the rector, to whom the school owed its original organization, and who took the liveliest interest in its welfare? O! it was plain enough, every boy thought so, that Gilbert had done best; but then, what might be his English essay and his translations? Truman was far advanced in all these points, and they knew—for their own eyes were witnesses of it, and he had said so repeatedly, that he had been fagging very hard, whereas no one could answer for Gilbert, no difference had been seen in him. Now if Gilbert really should have been taking pains—they pressed him on the point, coaxed him to tell them, declared they were certain of the fact—but all was to no purpose, they could gain nothing from him but a good-humoured smile, and a recommendation to wait patiently till Wednesday.

Truman in the meantime was mortified and uneasy. In spite of his high opinion of himself, he was too good a judge of what was accurate not to be conscious that Gilbert had frequently answered better than himself; but then he comforted himself that was not all. Every one knew that Gilbert had picked up a good deal of general knowledge; history, geography, &c., cost little trouble to acquire; when they came to subjects where downright hard study had been requisite, things would be very different. Notwithstanding, if he could have got at them, he would have revised more carefully still his different compositions. He said not a word to any one at home, nor did Gilbert, though from a different motive. Truman, indeed, was saved from all inquiries on the subject from his father, as that gentleman only reached home the morning the prizes were to be distributed.

Wednesday had arrived, carriages began to roll, and parties of ladies and gentleman were seen bending their steps towards the school. The room was soon quite full. Mr. Truman and his family occupied very prominent seats; he had gone early for the purpose of securing them, and was now with a certain air of importance and satisfaction noticing all

whom he recognized among his acquaintance. Mr. Stewartson was one of those whom he thus acknowledged with a consequential, patronizing familiarity. The latter was advancing towards the middle seat in the front at the request of his wife, when he caught his eye ; in an instant he relinquished her arm, committed her to the care of a friend, and retired to a distance with some other gentleman who, like himself, were content to stand.

All was now arranged, the buzz of many voices ceased, and the business of the day commenced. The interest deepened as it proceeded, and many a heart beat with anxiety, hope, and fear. Maternal love and fatherly pride, boyish emulation and friendly sympathy, each bore their part at that moment ; while "the agony of suspense" bound all in one chain as the names of the successful candidates began to be read. Mr. Truman had started from his seat, and with eyes of devouring attention listened in breathless expectation for that of his son. Mr. Stewartson had gradually emerged from his retirement, and was not very far from his wife, whose flushed cheek bore a strong contrast to the pallidness that marked his own countenance.

The inferior prizes were declared first, then another, and another still higher—a pause, and the fall of a leaf might have been heard—then came the announcement of the head prize, and Gilbert Stewartson's name rang through the school. If any one can behold with insensibility the bright, the glowing, the animated expression of juvenile joy, let him be pitied ;—in the loss of the pleasure he would otherwise have felt, he is sufficiently punished ; they who were present this day, and could appreciate the scene, experienced a sensation that few were likely to forget.

Dr. Middleton arose. "It is my pleasing task," said he, "to convey to you, Gilbert Stewartson and George Truman, the expression of Dr. Stephens' approbation of the examination you have both passed, an examination which he declares it has seldom been his lot to see equalled. To you," turning to Truman, "great commendation is due, and it is no disgrace to you that you must yield to a superior on the present occasion." A sweet but serious smile overspread his benignant features as he addressed Gilbert. "I will not congratulate you, individually, on the honourable rank you have attained among your school-fellows, and the proof you have given of general ability ; you are but on the threshold of eminence, and it must remain with yourself to prove whether this day shall be a reproach to you, or a lasting honour ; the end of a course which, I trust we of this generation shall not see, must give it all its brightness, all its worth, all its excellence ; but I do sincerely congratulate your master on such a pupil, your parents on such a son, and I hope I may hereafter add, society in general on such an acquisition."

"Well done, well done, Gilbert!" cried the boys, ranging themselves round him after having given him a hearty hurrah. "Now for chairing you. You have flared-up at last, and done it to perfection, too ; but why didn't you tell us what you meant to do?"

"Because," said he archly, "I was afraid it might be only a 'flare-up, and that the flame might go out again, and end in nothing.'

"And do you really intend to keep it up?" was the eager demand of many voices.

"I do," replied Gilbert, firmly. "Hurrah, hurrah!" shouted the boys : and to this hour he has kept his word ; affection and respect for his parents having entirely conquered a defect which it is but just to say arose from

a morbid pride kindled by too much success at first, and nourished by the incompetency of others to check it, by the salutary exertion of his powers. He has since acquired much higher honours, and superior academical distinctions are yet before him; but every time he answers his mother's letter of congratulation on a fresh success, he writes:—“O! my dear mother! your love and my dear father's blush of mortification for his idle son it is, which having first lighted the flame, has since given permanéncy as well as brilliancy to my ‘flare-up.’”

## OUR NATIVE SONGSTERS.

THE THRUSH (*continued*).

THE thrush remains with us all the year, receiving great accessions at the autumnal season, from numbers which come from the north, with the fieldfares and redwings. They do not fly in flocks, but are generally found near together. Even in winter their sweet songs may be heard; and a throstle has been heard to sing on Christmas Day, while its song is truly the herald of spring; for even before a violet has peeped forth, it is becoming frequent in every wood. Calder Campbell, in an unpublished poem, describes its early singing among the trees.

“A taste of winter in the murky town  
Drove me to seek for shelter in the fields,  
But leafless trees, and pastures damp and brown,  
Gave little promise of what spring-tide yields.

The lanes were rugged for the want of leaves,  
And green things saw I not, save one alone,  
The generous Ivy, that o'er bareness weaves  
Its graceful wreath to cover tree and stone.

Yet winter has expired: where yesterday  
Keen snow-drift powder'd every way-side thing,  
The balmy dew gleamed in the sun's glad ray,  
To scatter pearls where red-tipped woodbines cling.

It is the spring ! for, lo ! unfolded yet—  
 Where pale-green buds peep from the elm-tree boughs  
 And where rich sulphur-tinted flowers are set  
 Around the slight stalks of the first primrose.

It is the Spring ! I hear her first glad song !  
 I see her earliest bird, the speckled thrush !  
 His descant rich swells sweet yet loud along,  
 And makes a vocal bower of every bush.

Oh, welcome Spring! oh, welcome vernal flowers !  
 Oh, welcomer than all, the merry bird  
 Whose warbling music—carnest of bright hours—  
 Is the first hymn to Spring by wandering poet heard."

The thrush, though not so endearing to man when in captivity as are many caged songsters, yet is not wanting in love to its kind. The parent birds both share in the work of incubation, and are very assiduous on the care of their young. Mr. Knapp mentions an instance of thoughtful care in a thrush which is very interesting :—" We observed, this summer," says this writer, " two common thrushes frequenting the shrubs on the green in our garden. From the slenderness of their forms, and the freshness of their plumage, we pronounced them to be birds of the preceding summer. There was an association and friendship between them that called our attention to their actions. One of them seemed ailing, or feeble from some bodily accident ; for though it hopped about, yet it appeared unable to obtain sufficiency of food. Its companion, an active sprightly bird, would frequently bring it worms or bruised snails, when they mutually partook of the banquet : and the ailing bird would wait patiently, understand the actions, expect the assistance of the other, and advance from his asylum upon its approach. This procedure was continued for some days ; but after a time, we missed the fostered bird, which probably died, or by reason of its weakness, met with some fatal accident."

The thrush is very fond of bathing, and when the morning sun gilds the clear rivulet, the bird goes down to the water, luxuriating in its delights ; and often several wild thrushes may be seen thus commencing the day in company. Bechstein remarks that it is at the borders of streams that the fowlers catch them most readily. In some cases they employ a tame bird, which runs and flutters on the banks of the water, and serves as a decoy to the wild thrushes. He observes that the fowlers should be in no haste to take them, for that the thrushes like to bathe together to the number of ten or twelve at once ; and no sooner has a thrush found a bath to its liking, than it begins the call which assembles its companions. It would seem that the sight of the bath gives the bird great joy, for it utters the cry of " Sik, sik, sik, siki, tsac tsac tsac," which is immediately responded to by many voices of gladness. The thrushes, however, seem to be very cautious in their proceedings, for they seldom venture into the water until the more courageous robin red-breast has already tried it ; though, no sooner has one thrush commenced the ablution, than the rest follow, quarrelling among themselves if the stream is narrow, or so filled up with water-plants as not to afford space for the accommodation of the whole party.

Our song-thrush inhabits every country in Europe, frequenting gardens and woods near streams or meadows. It is the Petite Grive of the French : the Tordo Bottaccio of the Italians ; and the Aderyn tronfraith of the ancient British. Clare alludes to it by the name of Mavis.

"The Mavis Thrush with wild delight,  
Upon the orchard's dripping tree,  
Mutters, to see the day so bright,  
Fragments of young Hope's poesy ;  
And oft Dame stops her buzzing wheel,  
To hear the Robin's note once more,  
Who tootles, while he pecks his meal,  
From sweet-briar hips behind the door."

Mr. Waterton considers that the bird referred to by David in the 102nd Psalm, was a species of thrush. The comparison is familiar to us all, in which the Psalmist, after describing by various poetic and touching images the depth of his sorrow and loneliness, added, "I watch and am as a sparrow alone upon the house-top." The Hebrew word which our translators have here rendered "sparrow," includes many insectivorous and fruit-eating birds, and among them, all the thrushes of Europe. It is most unlikely that the sparrow should have been intended in the passage, because, as every observer of nature knows, no bird is more social in its habits than the house-sparrow; and though it may be seen in numbers sitting on the house-top, yet one rarely sees a lonely sparrow there. Mr. Waterton, who had pondered on this, has concluded that the bird alluded to is the *Passer solitarius*; in English, "the solitary sparrow;" and in Italian, *Pussera solitaria*, which he says is a "real thrush in size, in shape, in habit, and in song, with this difference, that it is remarkable throughout all the East for sitting solitary on the habitations of man."

"The first time," says this writer, "that I ever saw this lonely plaintive songster, was in going to hear mass in the magnificent church of the Jesuits, at Rome. The dawn was just appearing, and the bird passed over my head, in its transit from the roof of the Palace Odescalchi, to the belfry of the church of the twelve apostles, singing as it flew. I thought it had been the Italian blackbird with notes different from those of our own, for its song was partly that of the blackbird, and partly that of the storm-cock; but not so loud as the last, nor so varied as the first. I found out my mistake in due time; and, on seeing that the bird was the true solitary thrush, I paid particular attention to its habits."

It is indeed a solitary bird, for it never associates with any other, and only with its own mate in breeding-time; and even then it is often seen quite alone upon the house-top, where it warbles in sweet and plaintive strains, and continues its song as it moves in easy flight from roof to roof. The traveller who is fond of ornithology may often see this bird on the remains of the Temple of Peace, and occasionally in the Villa Borghese, but much more frequently on the stupendous ruins of the Baths of Caracalla, where it breeds in holes of the walls; and always in the Colosseum, where it likewise makes its nest; and in fine, at one time or other of the day, on the tops of most of the churches, monasteries, and convents, within and without the walls of the Eternal City.

The winter woods have a dreary aspect when pelting rains come down upon the leafless trees; but let one gleam of sunshine illumine a December or January morning, and we find many beauties there. Half hidden by the dry brown leaves, the foliage of the primrose is peeping forth, and the chickweed has a tiny white flower, which we mark now when flowers are few. Red berries gather on the glossy holly bough; large wreaths of the snowy seeds of the traveller's-joy hang on the branches of wild rose bushes; the cornel and the bramble have yet a reddish-brown leaf, the old oak, a

coronal of yellow, and the privet a spray of green leaves, to tell of the beauty which is past and the beauty which is coming. The winds which but a few days since swept through the wood, bending the strong boughs and snapping some of the weaker ones, are to-day only powerful enough to awaken a melody as they come in fitful gusts, or slowly relapse into more lengthened cadences. They do not whisper like the lute, but neither do they remind us of the full sound of the organ. They have melodies of their own, sweeter than those of any instrument which the skilful hand of man has accommodated to the yearning for sweet sounds which the Great Creator has implanted within us, and to which He has turned the rich symphonies of Nature.

It is in the winter woods, and when sunshine succeeds to some days of bad weather, that we hear the sweetest notes of the missel-thrush\* (*Turdus viscivorus*). The song is not peculiar to winter or early spring, but is sung nearly through the year. Perched on the very summit of the gnarled oak, or on the taller elm, the loud plaintive tones are caroled vigorously. Sometimes the strain seems to consist of three or four notes, incessantly repeated, nor is it ever very varied; but there are seasons when it is rich and clear, and it is then often mistaken for the tones of the blackbird. When the song is loudest and harshest, it is regarded as an indication of approaching rough weather; hence the bird is called storm-cock in some country places, and its presage is relied on as surely by the countrymen, as that of the mist on the mountain, which would tell to the mountaineer of coming rains. That admirable observer of Nature, Bishop Mant, has well described the variations of the song.

"But hark! from top of loftiest beech  
The missel-cock's untuneful screech;  
Not like the rich and varied note  
Melodious from the Thrush's throat,  
But a distinct discordant scream,  
As if for day's departing beam  
To mourn, or with sad presage meet  
The embryo storm of rain and sleet:  
More tuneful when he takcs his stand  
'Mid the warm sunshine, where at hand  
On hawthorn, elm, or maple grow  
The boughs of pale green mistletoe,  
And plucks its yellow flowers, or feeds  
On the dark ivy's berried seeds:  
And sure I ne'er have heard a song  
More clear, more full, more rich, more strong.  
Though mix'd at times with harsher note,  
Than issued from his evening throat,  
What time I've seen the breezes blow  
His form all heedless to and fro,  
And heard him, as beneath I stood,  
Pour forth his music's changeful flood."

The French call this bird *La Draine*, and the Germans the *Misteldrossel*, like ourselves naming it from the Mistletoe, on which it so often feeds.

\* The missel-thrush is eleven inches in length. The head and upper parts are deep brown; the wings and tail umber-brown; the whole under parts yellowish white, thickly studded with black spots, of which those on the throat and breast are triangular, and those on the belly and sides are round; the beak and feet are brown, the former darker than the latter; the tail is slightly forked.

Much of the dispersion of this plant is owing to the thrush ; for the berries after being swallowed, are often left in a fit state for germination on the fruit-trees, where this handsome parasite soon grows with a goodly bough. Nor is the plant confined to fruit-trees, for it may be seen also on the thorn, maple, poplar, hazel, lime or ash, and sometimes, though very rarely, on the oak. It is very ornamental with its pale green leaves and pearly berries to our woods in winter, but in many parts of the continent, as in France, it is much larger, and indeed almost covers the trees on which it springs. The berries constitute a good portion of the food of our birds ; but the missel-thrush eats also those of the ivy, holly, or yew, besides various insects,—worms, slugs, and snails. It is not a great depredator of our gardens, though it sometimes eats a few cherries and raspberries ; and the fruits of the mountain ash are invariably borne away if these songsters are to be found in their neighbourhood.

Mudie remarks that there is in our familiar appellation a sort of double naming in the plants and the birds. Thus the latter is called missel-thrush, because it missels (soils) its toes with the slime of the berry ; while the name of the misseltoe refers to its soiling the toes of the bird.

All the sweet singing of our woods is performed by small birds, for to large birds have been denied the powers of song. The missel-thrush is not only the largest of its genus, but is also the largest of all our songsters. It is a very bold, quarrelsome bird ; but, like some warm-tempered persons, it is not destitute of the affectionate feelings which win our regard. Thus Gilbert White remarks : "It is, while breeding, fierce and pugnacious, driving such birds as approach its nest with great fury to a distance. The Welsh call it *Penn-clwyn*, the head or master of the coppice. He suffers no magpie, jay, or blackbird to enter the garden where he haunts, and is for the time a good guard to newly-sown legumes. In general, he is very successful in the defence of his family ; but once I observed in my garden, that several magpies came, determined to storm the nest of a missel-thrush : the parents defended their mansion with great vigour, and fought resolutely, *pro aris et focis* ; but numbers at last prevailed ; they tore the nest to pieces, and swallowed the young alive."

These magpies are cruel enemies of many of the smaller birds, and in spring seem to keep up perpetual warfare with the thrushes. Thus Mr. Waterton tells of a tame magpie which, being allowed its freedom, and the use of its wings, seized on a female missel-thrush which was attending to the family duties of the spring, and brought it close to a spot where some masons were at work. But the male storm-cock had love and courage, and fought the magpie bravely, till his mate was rescued, though at the expense of many feathers. During the period of incubation, the female bird fights in defence of the young as fiercely as her mate, and both birds dash at the cat, the crow, or any other enemy, till they succeed in driving it away. In the season at which berries are getting somewhat scarce, and when the red-wing and the fieldfare come to claim their share in the banquet, it is most amusing to hear the angry chattering which ensues, till the smaller birds have to leave their unfinished meal. Mr. Waterton describes the sound made by the missel-thrushes when danger is nigh, as resembling that produced by striking the teeth of a comb smartly with the finger.

The storm-cock is a decided dweller in trees, except when it resorts to the berry-bearing shrubs, or when occasionally hunting for food on the ground. The nest, which is built in April, is very nicely made and well fitted to protect the little ones from the rain or cold. The outside is com-

posed of dry grass or of some of those grey lichens which hang about our old trees ; and these are intermixed with dried grasses and green moss. Then comes a compact layer of mud, which is again lined with fine grasses. But though these are the usual materials of the nest, the storm-cock will, at times, help itself to anything likely to serve its purpose as well. Thus a lady in Ireland is said, by Mr. Thompson, to have lost a cap which was laid out to dry upon the spring grass. All search for the lost head-dress was unavailing, till autumn came and stript away the leaves from the trees, and something white was seen lying among the boughs—one glance at the object told the tale, and the owner soon saw the shreds of her lace very ingeniously wrought in among the plants, which had formed the home whence the young and old missel-thrushes had long since departed.

Five eggs of a greyish green tint, speckled over with chocolate-coloured spots, are usually deposited in the nest. This is placed in the angle of the bough of the forest or orchard tree, and is often left so exposed to view; as that any passer-by might observe it ; sometimes, however, the little builder exerts much ingenuity in finding such materials for the outer portion of the nest, as might mislead by their similarity to the branch on which it is placed.

The missel-thrush is usually a wild and wary bird, shunning the dwellings of man, though, during the period of incubation, it seems fearless of all danger. It is not uncommon in any part of our island, but is not anywhere so plentiful a bird as is the common thrush. During the months of August and September, the missel-thrushes seem to assemble in numbers, but they are not migratory birds.

#### CHEESE MADE FROM POTATOES.

CHEESE, it is said, of extremely fine quality, is made from potatoes in Thuringia and part of Saxony, in the following manner :—After having collected a quantity of potatoes of good quality, giving the preference to the white kind, they are boiled in a caldron, and after becoming cool, they are peeled and reduced to a pulp, either by means of a grater or mortar. To five pounds of this pulp, which ought to be as equal as possible, is added a pound of sour milk, and the necessary quantity of salt. The whole is kneaded together, and the mixture covered up and allowed to lie three or four days, according to the season. At the end of this time, it is kneaded anew, and the cheeses are placed in little baskets, when the superfluous moisture is allowed to escape. They are then allowed to dry in the shade, and placed in layers in large pots or vessels, where they must remain for fifteen days. The older these cheeses are, the more their quality improves. Three kinds of them are made. The first, which is the most common, is made according to the proportions above indicated ; the second, with four parts of potatoes and two parts of curdled milk ; the third, with two parts of potatoes and four parts of cow or ewe milk. These cheeses have this advantage over every other kind, that they do not engender worms—and keep fresh for a great number of years, provided they are placed in a dry situation, and in well-closed vessels.

THE  
**HOME FRIEND;**

A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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NINEVEH.—WAR.



NIMROUD CHARIOT.

“Is this the man that made the earth to tremble, that did shake kingdoms ; that made the world as a wilderness, and destroyed the cities thereof ; that opened not the house of his prisoners ?” (Isa. xiv. 16, 17.)

Of the truth of the portrait which Scripture draws of the Assyrian monarchy, the monuments now in course of exhumation afford striking confirmation. The prominent place given to scenes of battle, carnage, conquest, and spoil, in the sculptured and pictured embellishments of the royal palaces, show how large a part martial exploits had in the ambition of the

king, and how much war was considered as his proper occupation. In these scenes he is depicted as taking his eager part in all the varieties of warfare that the age was acquainted with, or the genius of the artist could supply; now going forth with his armed bands and chariot-warriors, now pouring forth the winged shafts from his mighty bow as he stands in his advancing car: now, regardless of fatigue, he descends from his chariot, and mingles in the thick of the fight on foot; now he besieges a walled city, shoots his arrows against its battlements, and brings up his powerful rams and engines against its walls; now he fords rivers, scales mountains, penetrates forests in pursuit of his foes; now he reviews his captives led away in bonds, returns in triumphal procession at the head of his victorious captains and military eunuchs, or receives in his palace the treasure and spoil of various kinds that his successful enterprises have produced. These were the favourite subjects of palatial art in those days; in the contemplation of which the royal conqueror was never tired; they were the records of national and personal glory, in the splendour of which he desired his name to be emblazoned in the eyes of posterity.

When the numerous cuneiform inscriptions which exist on the monuments,—the true records of Assyrian history, to which the bas-reliefs bear about the same relation as the pictorial illustrations of our modern works bear to the letter-press,—are translated and published in an European language, we shall doubtless acquire a far more accurate acquaintance with the subjects treated of in this volume than we can possibly obtain at present by the aid of the sculptures alone. This achievement the literary world may hope to see accomplished at no distant day, thanks to the learning, the perseverance, and skill of such men as Colonel Rawlinson, Dr. Hincks, Professor Grotefend, and other labourers in this inviting but arduous field. Meanwhile the version of the famous inscription on the Black Obelisk, published by Colonel Rawlinson, affords us a specimen of the events of an Assyrian monarch's reign, as registered by himself on a public monument intended to perpetuate his glory. We see here how truly WAR was *the business of his life.*

The king, Temen-bar II., whose conquests are thus recorded, was the builder of the central palace at Nimroud, and the son of Sardanapalus (Assaradan-pal), who built, or at least inhabited and adorned, the northwest palace of the same mound, the oldest monument of Assyrian art yet discovered. A remote antiquity must therefore be assigned to his reign, though its exact chronology cannot yet be fixed.\* The reign of Temen-bar was long, and each of the thirty-one years through which it was protracted, witnessed a campaign of conquest and spoliation against some one or more of the surrounding nations. Many of these expeditions were against tribes already subjugated, but rising in rebellion against the iron yoke of the conqueror; and we see that the empire of Assyria at the time of this record extended to the Mediterranean, to the Caspian, and to the Persian Gulf. The greater part of these expeditions the monarch conducted in person; but towards the latter portion of his reign his advancing age probably diminished his activity, for the conduct of his wars was then generally entrusted to his faithful veteran commander Detarasar, the partner of his exploits, and the sharer of his fame throughout his lengthened reign.

The whole of this register, though of great geographical and historical

\* There is evidence that it was contemporary with that of Jehu king of Israel.

interest, is too long for our pages ; but we transcribe the events of the first ten years, from Colonel Rawlinson's valuable lections.

After a lengthened invocation of his idol gods, the enumeration of his titles, and the specification of his genealogy, Temen-bar says :—“ At the commencement of my reign, after that I was established on the throne, I assembled the chiefs of my people and came down into the plains of Esmes, where I took the city of Haridu, the chief city belonging to Nakharî.

“ In the first year of my reign, I crossed the Upper Euphrates, and ascended to the tribes who worshipped the god Husi. My servants erected altars (or tablets) in that land to my gods. Then I went on to the land of Khaniâna, where I founded palaces, cities, and temples. I went on to the land of Málar, and there I established the worship (or laws) of my kingdom.

“ In the second year, I went up to the city of Tel Barasba, and occupied the cities of Ahuni, son of Hateni. I shut him up in his city ; I then crossed the Euphrates, and occupied the cities of Dabagu and Abarta belonging to the Sheta, together with the cities which were dependent on them.

“ In the third year, Ahuni, son of Hateni, rebelled against me, and having become independent, established his seat of government in the city of Tel Barasba. The country beyond the Euphrates he placed under the protection of the god Assarac, the Excellent, while he committed to the god Rimmon, the country between the Euphrates and the Arteri, with its city of Bither, which was held by the Sheta. Then I descended into the plains of Elets. The countries of Elects, Shakni, Dayini, Enem (?), Arzaskán, the capital city of Arama, king of Ararat, Lazan and Hubiska, I committed to the charge of Detarasar. Then I went out from the city of Nineveh, and crossed the Euphrates, I attacked and defeated Ahuni, the son of Hateni, in the city of Sitrat, which was situated upon the Euphrates and which Ahuni, had made one of his capitals. The rest of the country I brought under subjection ; and Ahuni, the son of Hateni, with his gods and his chief priests, his horses, his sons and his daughters, and all his men of war, I brought away to my country of Assyria. Afterwards I passed through the country of Shelár (or Kelár), and came to the district of Zoba. I reached the cities belonging to Nikti, and took the city of Yedi, where Nikti dwelt. (A good deal of this part of the inscription I have been obliged to translate almost conjecturally, for on the Obelisk the confusion is quite bewildering ; the engraver having, as I think, omitted a line of the text which he was copying, and the events of the third and fourth year being thus mingled together : while in the Bull Inscription, where the date is preserved, showing that the final action with Ahuni took place in the fourth, and not in the third year, the text is too much mutilated to admit of our obtaining any connected sense. I pass on accordingly to the fifth year.)

“ In the fifth year, I went up to the country of Abyari ; I took eleven great cities ; I besieged Akitta of Erri in his city, and received his tribute.

“ In the sixth year, I went out from the city of Nineveh, and proceeded to the country situated on the river Belek. The ruler of the country having resisted my authority, I displaced him, and appointed Tsimba to be lord of the district ; and I there established the Assyrian sway. I went out from the land on the river Belek, and came to the cities of Tel-Atak (?) and Habaremya. Then I crossed the Upper Euphrates and received

tribute from the kings of the Sheta. Afterwards I went out from the land of the Sheta and came to the city of Umen (?) In the city of Umen (?) I raised altars to the great gods. From the city of Umen I went out and came to the city of Barbara. Then Hem-ithra of the country of Atesh, and Arhulena of Hamath, and the kings of the Sheta, and the tribes which were in alliance with them, arose : setting their forces in battle array they came against me. By the grace of Assarac, the great and powerful god, I fought with them and defeated them ; 20,500 of their men I slew in battle or carried into slavery. Their leaders, their captains, and their men of war I put in chains.

"In the seventh year I proceeded to the country belonging to Khabn of Tel-ati. The city of Tel-ati, which was his chief place, and the town which were dependent on it, I captured and gave up to pillage. I wen out from the city of Tel-ati and came to the land watered by the head streams which form the Tigris. The priests of Assarac in that land raised altars to the immortal gods. I appointed priests to reside in the land to pay adoration to Assarac, the great and powerful god, and to preside ove the national worship. The cities of this region which did not acknowledge the god Assarac I brought under subjection, and I here received the tribute of the country of Nahiri.

"In the eighth year, against Sut-Baba, king of Talha-Dunis, appeared Sut-Bel-herat and his followers. The latter led his forces agains Sut-Baba and took from him the cities of the land of Beth Takara.

"In the ninth year, a second time I went up to Armenia and took the city of Lunanta. By the assistance of Assarac and Sut, I obtained possession of the person of Sut-Bel-herat. In the city of Umen I put him in chains. Afterwards Sut-Bel-herat, together with his chief followers, condemned to slavery. Then I went down to Shinar, and in the cities o Shinar of Borsippa, and of Ketika, I erected altars and founded temple to the great gods. Then I went down to the land of the Chaldees, and occupied the cities, and I marched on as far even as the tribes who dwel on the sea-coast. Afterwards in the city of Shinar, I received the tribut of the kings of the Chaldees, Hateni, the son of Dákri, and Baga-Sut, the son of Hukni, gold, silver, gems, and pearls.

"In the tenth year, for the eighth time I crossed the Euphrates. I tool the cities belonging to Aralura of the town of Shalumas, and gave them u to pillage. Then I went out from the cities of Shalumas, and I proceeded to the country belonging to Arama (who was king of Ararat). I took the city of Arnia, which was the capital of the country, and I gave up to pillage one hundred of the dependent towns. I slew the wicked, and carried off the treasures."

The number of troops which the Assyrian monarchs were accustomed to bring into the field would of course vary at different periods. We ge a notion of it by Temen-bar's expressions in the record of the fourteentl year's campaign. "*I raised the country, and assembled a great army with 120,000 warriors, I crossed the Euphrates.*"

At a much later era the army of Sennacherib, which was totally destroyed in the neighbourhood of Jerusalem by the immediate power o God, consisted of 185,000 men. And the forces placed by Nabuchodono sor under the command of Holofernes, for the subjugation of Syria and Palestine, amounted to 120,000 foot and 12,000 horse (Judith ii. 5, 15) but the infantry was augmented at the siege of Bethulia, to 170,000 doubtless by levies from the conquered provinces (vii. 2).

There is no doubt that in so great an empire, founded and established by martial enterprise, in the midst of and over warlike nations, military discipline and tactics were well studied and carried to a high pitch of excellence. Of this, however, we can learn little from the sculptures, nor do the inscriptions yet read throw much light on it. The record of Temen-bar repeatedly alludes to three ranks of soldiers, "the leaders and captains, and men of war," or as it is elsewhere expressed, "superior officers, captains, and fighting men," besides the commander-in-chief. The proportion of the officers to the ranks is interesting; 460 superior officers, 1,121 captains, and 13,000 fighting men are enumerated.

Nothing like an array of battle, or order of march, appears in the more ancient sculptures; with the exception of the curious association of the soldiery in pairs, the one offensive the other defensive, the warriors are seen scattered promiscuously over the field, each apparently choosing his own station and mode of fighting. Probably, however, this is to be attributed to the taste of the artist, who doubtless wished to give as much of variety and of interest to the scene as he could.

In the later eras disciplined troops are clearly represented, and we trace something like a regular order of battle. Thus at Khorsabad the front rank is composed of archers alone, evidently mercenaries or allies (their caps, pointed beards, and short coats, distinguishing them from the Assyrian troops); then follows a troop of archers, each protected by his targeteer; behind these are stationed warriors armed with the spear and round buckler: and these are succeeded by a rank of archers shielded by round buckler bearers. All the native troops in this scene are heavily-armed.

Sometimes the arrangement is different. The front rank is composed of spearmen with round bucklers, the second of archers who kneel on one knee to shoot, and the third of archers erect, who are thus able to aim over the heads of their fellows.

The same sort of arrangement is shown in the Kouyunjik bas-reliefs, where also long lines of troops are represented in march. Cavalry appears here in large bodies for the first time, galloping in regular order over broad roads cut through mountain-forests. Ranks of infantry are also introduced, one of which consists of men armed with the spear alone, another of men wielding nothing but the mace; and again, another rank armed with the spear and round shield.

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#### HOME REFORM—(*continued*).

The necessity for the admission of fresh air into all apartments occupied by human beings, and the importance of providing for the escape of bad or vitiated air, will be evident from the fact that every person during each minute vitiates a considerable volume of air, that is, renders it unfit to do the very work which breathing is designed to do in the wonderful machinery of animal life.

Every one must have remarked the copious *exhalation* of moisture which takes place in breathing, and which presents a striking resemblance to the exhalation from the surface of the skin. In the former, as in the latter instance, the exhalation is carried on by the innumerable minute capillary vessels in which the small arterial branches terminate in the air-cells. Breathing from the lungs is, in fact, one of the chief outlets of waste matter from the system; and the air which we breathe is thus vitiated, not only by

the subtraction of its oxygen, and the addition of carbonic acid, but also by animal effluvia, with which it is loaded when returned from the lungs. In some individuals, this last source of impurity is so powerful as to render their vicinity offensive and even insupportable to the bystanders, and it is its presence which gives the disagreeable, sickening smell to crowded rooms.

*Absorption*, in like manner, takes place from the lining membrane of the lungs, as we have seen it do in the skin. When a person breathes an atmosphere loaded with fumes of spirits, or of tobacco, a portion of the fumes is taken up by the absorbing vessels of the lungs, and carried into the system, and there produces precisely the same effects as if introduced into the stomach: animals, for example, have been killed by being made to inhale the fumes of prussic acid for a few minutes. The lungs thus become a ready inlet to contagion, and other poisonous influences, diffused through the air which we breathe.

It is an essential condition of healthy respiration that a regular supply of pure fresh air be provided, without which the requisite changes in the constitution of the blood, as it passes through the lungs, cannot be effected. In order that you may understand and appreciate this important condition, some explanatory remarks on the nature of the changes alluded to will be necessary.

*Atmospheric air* consists of about seventy-eight per cent. of nitrogen or azotic gas, twenty-one per cent. of oxygen, and not quite one per cent. of carbonic acid or fixed air; and such is its constitution when taken into the lungs in the act of breathing. When it is expelled from them, however, its composition is found to be greatly altered. The quantity of nitrogen remains nearly the same, but eight or eight-and-a-half per cent. of the oxygen, or vital air, have disappeared, and been replaced by an equal amount of carbonic acid. In addition to these changes, the expired air is loaded with moisture. Simultaneously with these occurrences, the blood collected from the veins, which enters the lungs of a dark colour and unfit for the support of life, assumes a florid red hue, and acquires the power of supporting life.

From oxygen being thus essential to life and respiration it is often called vital air, in contradistinction to those gases which are incapable of supporting life.

From these considerations, the importance of a due supply of fresh air wherever living beings are congregated must be obvious. It has been calculated that a man under ordinary circumstances consumes about 45,000 cubic inches of oxygen, and gives out about 40,000 cubic inches of carbonic acid, in twenty-four hours.

The fatal effects of breathing highly-vitiated air may easily be made the subject of experiment. When a mouse is confined in a large and tight glass jar full of air, it seems for a short time to experience no inconvenience, but in proportion as the consumption of oxygen and the exhalation of carbonic acid proceeds, it begins to show symptoms of uneasiness, and to pant in its breathing, as if struggling for air; and in a few hours it dies, convulsed, exactly as if drowned or strangulated. The same results follow the deprivation or vitiation of air in man and in all animated beings.

Numerous instances might be adduced of the fatal effects resulting from the crowding together in one apartment a greater number of human beings than the air contained in it would sustain, and from the absence of all regard to scientific rules in effecting ventilation. All must remember the sad story of the Black Hole at Calcutta.

In dwelling-houses lighted by gas, the frequent renewal of the air acquires increased importance. A single gas-burner will consume more oxygen, and produce more carbonic acid to deteriorate the atmosphere of a room than six or eight candles. If, therefore, where several burners are used, no provision be made for the escape of the corrupted air, and for the introduction of pure air from without, the health will necessarily suffer. Professor Faraday's arrangement for carrying off the air thus vitiated is very effectual, and its application may be learned at 110, Wardour-street.

The necessity for ventilation is not confined to rooms occupied in the day, but is of equal, if not greater, importance in sleeping apartments, which, of the two, are generally by far the most unwholesome. If the windows be opened for a short period in the morning, this is usually deemed sufficient, but no provision is made for the admission of pure air during the night, although on this mainly depends the restorative and refreshing effect of sleep. Curtains, and whatever tends to exclude a free circulation of pure air, ought to be avoided, and great care should be taken to change the bed clothes frequently, and to expose them to a draught through the day, in order to carry off the impurities with which they are saturated during the night. Small bed-rooms should be as little encumbered with furniture as possible, and the habit of stowing lumber under the bed be entirely abandoned.

The want of a free circulation of air greatly aggravates the evil which, in many dwellings, results from damp walls and floors. In the construction of new buildings it is easy to provide for these two most essential requisites of a healthy home—viz., that it should be dry and well ventilated; and if the working classes would, as far as may be in their power, practically manifest a sense of their importance, the same beneficial results might follow, which are already seen in London, where landlords begin to find that since improved accommodation has been provided in the Model Houses, tenants will not so easily submit to the defective and uncomfortable dwellings hitherto provided for them.

Those who have investigated the subject on scientific principles, show that in a dwelling-house each person ought to be allowed from 240 to 300 cubic feet of air to breathe per hour, or from four to five cubic feet per minute, and that by a continued movement it should be changed within that period. In a hospital the allowance must be considerably greater; inattention in such buildings to this all-important provision has in past years too often aggravated disease, and caused a great destruction of human life.

*Ventilation* may be described as of two kinds, natural, and mechanical or artificial. Doors and windows, with the crevices round them, chimneys and fire-places, conduce to the former; fans, pumps, screws, and other contrivances are employed to produce the latter.

Whenever a fire is lighted, the air in the lower part of the room is immediately set in motion, and a current begins to flow from the door and window, or any other opening, to the chimney, whereby much of the air which has become vitiated is carried off. This process of ventilation, in some slight degree, takes place when there is no fire in the chimney, and therefore bedrooms are much more healthy with a chimney than without one.

In giving some *practical directions* for ventilation, it may be remarked that improvements easily adopted in new are not always applicable to old buildings; but the general principles should be carried out as far as circumstances will admit, under the deep conviction of the absolute

necessity of pure air for the sustenance of a healthy state both of body and of mind.

In existing buildings, the ventilation of any living apartment may be generally much improved, without any sensible draught, by the introduction of an air-brick externally, and an iron frame internally, to which a sheet of perforated zinc is attached, and an iron plate hung to close it with a fall-down rack. In small rooms with a fire-place, the change of air thus caused, in addition to that from the door and window before described, is generally found sufficient to keep it in a healthy state.

In every room an opening for the escape of vitiated air ought to be made near the ceiling, especially in small bedrooms without fire-places. In some cases this may be effectively done by carrying up a pipe through the roof, bent at the top; in other cases an opening may be made over the door, with a piece of perforated zinc fitted in it. In some situations perforated or ventilating glass may be used with advantage, always remembering that where openings can be formed on the opposite sides of rooms, the air will be most speedily and effectually changed.

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### OUR NATIVE SONGSTERS.

#### THE BLACKBIRD.



Who has not paused in his ramble through the woods on some bright warm spring day, to listen to the mellow notes of the blackbird? (*Turdus merula*.) Perchance we have taken shelter beneath the boughs on which the delicate green leaves are daily becoming larger and more numerous, from the shower which alternates with the sunshine, and then as the gleams of the sun come forth again to render that foliage of brightest emerald hue, the blackbird sings its welcome in the sweetest strains. An April day suits it well, for it revels in the slight moisture which passing showers communicate to the atmosphere. The song is little varied, but so mellow, so flute-like are its tones, that few who are used to the country have failed to listen with delight. It is one of the earliest songs of spring, too, and beginning on some fine day of February, it fails not all the summer through, save at the period of moulting. We cannot, while the blackbird is singing,

see its jetty plumes, for it chooses for its place of song the thickest and most leafy part of the woodland. Could we have entered that wood when the morning sun was gradually gilding each leaf and bud with its earliest rays, we should have heard the loud greeting of the blackbird, like a psalm of thankfulness, for renewed sunshine.

At evening too, just when the shadows of the trees are lengthening on the ground, and all the landscape is assuming the faint grey tints of twilight, that blackbird's evening chaunt may tell to us the praises of its Maker. An approaching footstep disturbs the bird, and the sharp shrill cry which is then uttered, may be the sound of sorrow or of anger. The bird is, when wild, more subtle and distrustful than the song-thrush, and yet it can be tamed more easily when in captivity. Its powers of song render it a favourite cage bird, but its notes are never so sweet as in the green haunts which it loves so well, for they are too loud for a room, and are sometimes a sad annoyance in a neighbourhood where early rising is not practised, and when the glad morning song arouses the sleeper. But the pet blackbird may be taught to whistle many a little air, and is so good a mimie, that it can not only learn the notes of other birds, but is said by Dr. Latham to imitate the human voice. It has also been known to cry like a cock, and cackle like a hen, apparently enjoying the sound of the responses made by the fowls of the neighbouring farmyards.

We need not describe the bird so well known by its dark plumes, more black than even those of the raven, and its yellow bill, and yellow streaks around the eyes. The female bird, however, differs in colour, and the black plumage has a brownish hue, which on the chest passes into brown. White birds of this species are to be met with, and a naturalist who found one, to avoid the anomaly, calls it a white yellow bill.

The blackbird is, during winter, mostly a solitary bird, living in woods, hedges, and thickets; nor does it appear that we have many accessions of these birds from the north. It makes its nest in March or April, in large gardens, or thick hedges, or bushes of evergreen, frequently taking advantage of the dark green ivy, which, at this cold season, offers a secure covert from wind and rain; and which, during the early spring, has afforded in its dark berries, so good a supply of food. The nest is composed externally of fibres, moss, and small twigs; while a thick coating of mud forms an inner wall, which is well lined with fine grass. The eggs, which are four or five in number, are of a dull-bluish green, with darker blotches. Bishop Mant describes this structure, as placed,

"The overarching boughs between  
Of some selected evergreen,  
Of laurcl thick, or branching fir,  
Or bed of pleasant lavender,  
To lodge secure their pendent home  
A well-wove frame, with moisten'd loam  
Within cemented ; and without  
Rough but compactly, all about  
With moss and fibrous roots entwined,  
And wither'd bent grass softly lined,  
Where may repose, in season due,  
Their pregnant balls of chalky blue,  
Besprent about the flatten'd crown  
With pallid spots of chestnut brown."

Snails and slugs, worms and insects, are the food of the blackbird, accompanied by a vegetable diet of grapes, cherries, currants, gooseberries, and

the berries of the ivy, the holly, and the mountain ash. It must be admitted that these birds sometimes commit great ravages in the fruits of the orchards and gardens, but they more than compensate for this by their services in destroying snails and insects. Every one accustomed to observe grass lands knows how terribly these are sometimes injured by the larva of the common cockchafer; that insect which, in its perfected condition, often flies against us with its loud humming in our evening walks of May and June, and which is familiarly called the Oak-web. The grub of this insect remains for four years in a larva state, and will sometimes destroy the turf of whole acres of meadow land, feasting also upon the roots of corn, and when in great numbers, proving a sad pest to the agriculturist. Rooks are known to be great destroyers of this insect, following the ploughman in his course, and picking up the prey which the instrument may dislodge from the soil. Nor is the blackbird useless in ridding the land of cock-chafers. The Rev. W. T. Bree communicated a fact of this sort to the Magazine of Natural History, which forms a proof of their usefulness to man. "In the month of August last," says this gentleman, "I was struck with the rather unusually large assemblage of blackbirds which frequented my garden; eight or ten were frequently to be seen together; and one morning I counted thirteen at the same time, hopping about, and chattering on the grass plot before the house. Their visits were usually paid about eight o'clock in the morning, and continued to arrest my attention for perhaps ten days or a fortnight. The birds directed their operations more especially to particular spots on the grass plot, which they stacked up with their bills, till the turf, which changed colour, and was supposed to be dying, became almost bare in patches, and was quite disfigured by the refuse of grass, &c., which was left littered on the surface. Indeed, such was the rough and unsightly appearance which the grass plot presented in consequence, that hints were even thrown out that the blackbirds ought to be destroyed; for they had been repeatedly seen in the very act of disfiguring the turf, and the whole mischief was of course, from first to last attributed to them. Suspecting what might be the object of the birds' research, I turned up a piece of turf with the spade, and found it almost swarmed with the cockchafer grubs of various sizes; and this circumstance confirmed my suspicion, that it was for the purpose of feeding upon these larvae, that the blackbirds had made such havoc of the grass plot. They performed, in short, in this case, precisely the same service in destroying the cockchafer grub, that the rooks are so well known to do. The turf, I should add, soon regained its wonted verdure, the injured patches being scarcely to be distinguished from the rest of the grass plot."

This writer adds that this fact confirms him in the opinion, that birds which chiefly subsist on vegetables, yet vary this diet with some portion of animal food; as at the very time when the blackbirds were so busy in devouring the grubs of the cockchafer, the garden was full of currants and gooseberries, which form so agreeable a meal to these birds.

Our blackbird is the *Merle* of our olden poets, and both this and the scientific name *Merula* are said to be derived from *mera*, or solitary, because the bird is not gregarious. The Scotch still call it the *Merle*. Thus Graham says,

"List to the Merle's dulcet pipe! melodious bird,  
Who hid behind the milk-white hawthorn spray,  
Whose early flowers anticipate the leaf,  
Welcomes the time of buds, the infant years."

Shakspeare calls it—

“The Woosel-cock, so black of hue,  
With orange-tawny bill.”

And it is still called the garden ouzel in some counties. Woofel is another name by which the old English poets wrote of it, and which is apparently but a variation of Woosel. The Germans term the bird *Schwarzdrossel*.

The flesh of the blackbird is in some parts of the Continent considered a great delicacy during summer, though at the season in which it feeds on ivy berries it is somewhat bitter. In our country it is little eaten, and few of us would wish to share in the repast of which we read in the nursery, when

“Four-and-twenty blackbirds were placed in a pie.”

#### WILD FLOWERS.



COMMON BRAMBLE, OR BLACKBERRY. (*Rubus fruticosus.*)

Few are unacquainted with a plant whose fruits are so pleasing to the simple taste of childhood, and whose white flowers, sometimes tinged with pink, decorate every hedge during July and August. Elliott has said of it,

"Though woodbines flaunt and roses grow  
 O'er all the fragrant bowers,  
 Thou need'st not be ashamed to show  
 Thy satin-threaded flowers ;  
 For dull the eye, the heart as dull,  
 That cannot feel how fair,  
 Amid all beauty, beautiful  
 Thy tender blossoms are."

This, as well as some others of the genus, is a biennial woody plant, producing suckers from the root, which ripen and bear leaves one year, and flowers and fruit the next. Pliny said that the propagation of trees by layers was taught the ancients by the bramble-bush. Knapp has observed of both this and the Dewberry (*Rubus cæsius*), that they may almost be considered as evergreens, and adds, that we have perhaps no other shrubby plant naturally deciduous except the Privet. These shrubs may be often seen with many green or purplish leaves on their boughs when all others, save the Ivy and the Holly, are stripped of their summer honours.

The ancients held the notion that both flower and fruit of the Bramble were efficacious against the bite of serpents; and that the young shoots, eaten as salad, served to fasten the loosened teeth, was an old fancy in our own country. The green twigs have been used for dyeing; the stems are employed for thatching cottages; and the fruits are preserved or eaten in puddings. In Sweden the berries of the Arctic Bramble (*Rubus Arcticus*), as well as those of the Cloudberry (*Rubus Chamaemorus*), are highly prized for various domestic uses. The berries of both these species are larger than our Blackberry. The Cloudberry is found on Alpine moors in this country, and has an agreeable flavour. It is much eaten both by the Laplanders and Norwegians. The Arctic Bramble is found in Scotland, but rarely. The genus is named from the Celtic word *Rub*, red, from the colour of some of the fruits. The common Raspberry is included in it, and is sometimes found wild in the north of our island. Gerarde called it *Raspis*, or Hindberry.

#### WILLIAM COWPER.

This charming poet was born the 15th of November 1731, at Great Berkhamstead, in Hertfordshire. His father, a Doctor of Divinity, was Rector of this place, and one of the Chaplains of George the Second. Both his parents were descended from noble and ancient families, his paternal grandfather being brother to William Earl Cowper, and his mother tracing back a relationship to the houses of Boleyn, Howard, and Mowbray, and through them to Henry the Third, King of England.

The simplicity of the times in Cowper's childhood assigned him his first instruction in the day-school of his native village. In one of his poems he thus alludes to the circumstance :—

"The gard'ner Robin, day by day,  
 Drew me to school along the public way,  
 Delighted with my bauble coach, and wrapt  
 In scarlet mantle warm and velvet capt."

At six years old he had the misfortune to lose his kind and amiable mother. The best account that can be given of his feelings on her death—by which melancholy event, child as he was, he appears to have been deeply affected—is his own :—

"I heard the bell toll'd on thy burial day,  
 I saw the hearse that bore thee slow away ;  
 And turning from my nursery window drew  
 A long, long sigh, and wept a last adieu.  
 Thy maidens grieved themselves at my concern,  
 Oft gave me promise of a quick return ; •  
 What ardently I wish'd, I long believed ;  
 And disappointed still, was still deceived ;  
 By disappointment every day beguiled,  
 Dupe of *to-morrow* even from a child.  
 Thus many a sad to-morrow came and went,  
 Till, all my stock of infant sorrow spent,  
 I learn'd at last submission to my lot,  
 But though I less deplored thee, ne'er forgot."

On his mother's death he was placed under the care of Dr. Pitman, who resided a few miles from his home. With this gentleman he remained until he was eight years of age, when the appearance of specks on both his eyes alarmed his father, and the little boy was sent to a celebrated female oculist in London. He remained at her house two years, without deriving any benefit from her remedies; and at the expiration of that period he was sent to Westminster School. When he had been there a short time he caught the small-pox, which disorder, strange to relate, entirely removed the complaint in his eyes.

It does not appear what degree of proficiency in the rudiments of education he had attained before his entrance into this venerable establishment, then under the superindendance of Dr. Nichols, but it is certain that when he quitted it, at the age of eighteen, his scholastic acquirements were of the highest order.

After spending three months with his father at Berkhamstead, he was articled as clerk, for three years, to a Mr. Chapman, a solicitor, in London; it being the wish of his family that he should adopt the profession of the law. But legal studies possessed no attraction for the poetic and imaginative mind of Cowper, and instead of endeavouring to profit by the instruction he might have received, he passed the greater part of his time at the house of a near relation. This he playfully confesses in a letter written many years afterwards to Lady Hesketh, the daughter of this relative :—

"I did actually live three years with Mr. Chapman, that is to say, I slept three years in his house; but I lived, that is to say, I spent my days in Southampton Row, as you very well remember. There was I and the future Lord Chancellor (Lord Thurlow) constantly employed from morning to night in giggling and making giggle, instead of studying the law."

And in a more serious letter to his friend Mr. Rose, he makes the following just observations, to which we would earnestly call the attention of our young readers :—

"The colour of our whole life is generally such as the three or four first years in which we are our own masters make it. Then it is that we may be said to shape our own destiny, and to treasure up for ourselves a succession of future successes or disappointments."

Cowper's conduct at this time undoubtedly deserves our censure, for, had he seriously reflected on the subject, he must have been fully aware that it was extremely wrong thus to squander so large a portion of his precious time in idleness and unprofitable pursuits. Well would it have been for him had he remembered the wise advice of one of our poets—

"But soft, my friend—arrest the present moments,  
 For be assured they all are arrant tell-tales,  
 And though their flight be silent, and their path  
 Trackless, as the wing'd couriers of the air,  
 They post to Heaven, and there record thy folly ;  
 Because, though station'd on th' important watch,  
 Thou, like a sleeping, faithless sentinel,  
 Didst let them pass unnoticed, unimproved."

The three years for which he was articled to the solicitor being expired, at the age of twenty-one Cowper took possession of a set of chambers in the Inner Temple. By this step he became, or rather ought to have become, a regular student of the law : but the higher branches of jurisprudence were as little capable of fixing his attention, as the elementary parts of that science. He now devoted his hours to poetry and literature, occasionally associating with such of his Westminster schoolfellowes then resident in London as were distinguished for their literary talents. With the elder Colman, Bonnel Thornton, and Lloyd he was very intimate, assisting the two former in a periodical called the "Connoisseur," in which they were engaged, and writing numerous poems for Lloyd and other friends ; so that the twelve years which he spent in the Temple were, if not passed entirely in literary pursuits, so much engrossed by them, as to add little or nothing to the small stock of legal knowledge which he had previously gained from the solicitor.

At the end of this period, there being no prospect of his deriving any income from his profession, and his patrimonial resources being nearly exhausted, our poet found himself not only unable to prosecute his favourite project of marrying, and enjoying domestic felicity, but in danger of suffering from actual want.

His friends probably entertained similar apprehensions, for several among them exerted themselves to procure for him the office of Reading Clerk to the House of Lords ; but such was the exquisite sensitiveness of his disposition, that the idea of reading in public caused him feelings of apprehension, amounting even to torture. He begged and received permission to exchange the situation for a much less lucrative, but as he hoped less irksome one, then also vacant, namely, the Clerkship of the Journals of the House of Lords, which was supposed to require no attendance whatsoever.

An unlucky dispute in Parliament, however, made it necessary for him to appear before the Bar of the House and prove his ability for the situation. Accordingly he attended daily at the office to examine the journals, but his application was rendered useless, by that excess of diffidence which was inherent to his constitution.

"I read," he says, "without perception, and was so distressed, that, had every clerk in the office been my friend, it would have availed me little ; for I was not in a condition to receive instruction, much less to elicit it out of manuscripts without direction."

His amiable and grateful disposition would not suffer him to resign the office, and thus cause the discretion of his benefactor to be called in question, for having nominated him to a place, the duties of which he was unqualified to perform. He determined to make the attempt ; but, as the dreaded day approached, his terrors on the occasion rose to such a height, that they not only preyed upon his health, but completely overpowered his reason, and in a state of mental aberration he made several attempts upon his life.

His appearance at the Bar of the House was of course impossible, the

office was resigned, and he gradually became more calm ; but as he did so a natural horror of his late design, of which he retained some recollection, overwhelmed him with the bitterest and most heart-rending remorse, which contributed greatly to bring on a return of his malady.

He thus affectingly describes his melancholy and truly pitiable state of mind at this time :—

“ I never went into the street, but I thought the people stared and laughed at me, and held me in contempt ; and I could hardly persuade myself but that the voice of my conscience was loud enough for everybody to hear it. Those who knew me seemed to avoid me ; and if they spoke to me they seemed to do it in scorn. I bought a ballad of one who was singing it in the street, because I thought it was written on me. I dined alone, either at the tavern, where I went in the dark ; or at the chop-house, where I always took care to hide myself in the darkest corner of the room. I slept generally an hour in the evening, though it was only to be terrified with dreams ; and when I awoke it was some time before I could walk steadily through the passage into the dining-room ; I staggered and reeled like a drunken man. The eyes of man I could not bear ; but to think that the eyes of God were upon me, which I was assured of, gave me intolerable anguish.”

It seems that he was now possessed with the idea that he had committed an unpardonable sin ; and neither reason, nor religion, nor the arguments of his affectionate brother, could convince him to the contrary :—

“ I had indeed,” he writes, “ a sense of Eternity impressed upon my mind, which almost amounted to a full comprehension of it. My brother, grieved to the heart with the sight of my misery, tried to comfort me ; but all to no purpose. I refused comfort, and my sins appeared to me in such colours, that to administer it to me was only to exasperate me, and mock my fears.”

After having experienced a temporary relief from the sensible and religious conversations of his friend Mr. Martin Madan, the dreadful malady, which had so long been hanging over him, assumed a more decided character, and he became really insane. He says :—

“ A strange and horrible darkness fell upon me. If it were possible that a heavy blow could light upon the brain without touching the skull, such was the sensation I felt. I clapped my hand to my forehead, and cried aloud through the pain it gave me. At every stroke my thoughts and expressions became more wild and incoherent ; all that remained to me, clear, was the sense of sin and the expectation of punishment. These thoughts kept undisturbed possession of my mind all the way through my illness, without interruption or abatement.”

Cowper’s brother and friends consulted together on his case, and agreed that he should be removed to St. Alban’s, and placed under the care of the skilful and humane Dr. Cotton, who, besides being eminent as a physician, was a scholar and poet, and added to many accomplishments a peculiar sweetness of manners.

Here, after many months of extreme wretchedness, his reason in great measure returned, but it was unaccompanied by hope.

In about three months more, his brother, the Rev. John Cowper, came from Cambridge to visit him. Having heard from Dr. Cotton that the patient was much improved, his kind relative was grieved and disappointed to find him almost as silent and reserved as ever. This Cowper accounts for by saying, “ The first sight of my brother struck me with many painful

sensations, both of sorrow for my own remediless condition, and envy of his happiness."

As soon as they were alone, his brother asked him how he found himself. Cowper replied, "As much better as despair can make me." But upon his brother's protesting to him that his present opinions were erroneous, and that he laboured under a delusion, Cowper burst into tears, and cried out, "If it is a delusion, then I am the happiest of beings!"

The brothers dined together, and Cowper passed the afternoon more cheerfully. That night he was refreshed with calm and tranquil sleep, and arose the next morning in much better spirits.

He now became capable of seeking and receiving consolation from prayer, and the study of the Holy Scriptures.

A few days before his arrival at St. Alban's he had, in a fit of religious despondency, thrown aside the Bible, as a book in which, owing to his unworthiness, he could no longer have any interest or concern:—

"The only instance," he says, "in which I can recollect reading a single chapter, was about two months before my recovery. Having found a Bible upon the bench in the garden, I opened it at the eleventh chapter of St. John, where Lazarus is raised from the dead; and saw so much benevolence, mercy, goodness, and sympathy with miserable man in our Saviour's conduct, that I almost shed tears, even after the relation, little thinking that it was an exact type of the mercy that Jesus Christ was on the point of extending towards myself. I sighed and said, 'Oh, that I had not rejected so good a Redeemer, that I had not forfeited all his favour!' Thus," he continues, "was my heart softened, though not yet enlightened. I closed the book without intending to open it again. Having risen with something of a more cheerful feeling, I repaired to the room where breakfast was waiting for me. I was continually more and more persuaded that I was not utterly doomed to destruction. The way of salvation, however, was still hid from my eyes."

At length his despair was, for the time, effectually removed, by the perusal of some of those consoling passages in the Word of God, which speak of the full, perfect, and sufficient sacrifice made by our blessed Saviour, on the cross, for the sins of the whole world.

We give his account in his own words:—

"The happy period which was to shake off my fetters, and afford me a clear opening of the free mercy of God in Christ Jesus, was now arrived. I flung myself into a chair near the window, and seeing a Bible there, ventured once more to apply to it for comfort and instruction. The first verse I saw was the twenty-fifth of the third chapter of Romans—'Whom God hath set forth to be a propitiation through faith in his blood, to declare his righteousness for the remission of sins that are past; through the forbearance of God.' \* \* \* \* \* I saw," continues Cowper, "the sufficiency of the atonement made by the Sun of Righteousness—my pardon sealed in his blood, and all the fulness and completeness of his justification."

In the summer of 1765 Cowper quitted St. Alban's, and took lodgings in the town of Huntingdon, where he made acquaintance with the family of the Rev. Mr. Unwin. His friendship, which was productive of the most important benefits to our poet, was commenced accidentally. William Unwin, the son of this clergyman, first observed Cowper in church, and struck by his uncommonly interesting countenance and manners, on the conclusion of the service followed him to a lonely walk, and then entered

into conversation with him. In a short time, so great was the pleasure the solitary poet took in the society of his newly-acquired friends, that he left his own lodgings to reside entirely at their house, where he was treated with the tenderest kindness and sympathy, and where he at last regained that happiness and peace of mind to which he had so long been a stranger.

Cowper's mode of life at this period more resembled that of a penitentiary friar, than of a Protestant layman.

He himself describes it in these terms:—

" We breakfast commonly between eight and nine; till eleven, we read either the Scriptures, or the sermons of some faithful preacher of those holy mysteries; at eleven we attend Divine Service, which is performed here twice every day; and from twelve to three we separate, and amuse ourselves as we please. During that interval, I either read in my own apartment, or walk, or ride, or work in the garden. We seldom sit an hour after dinner, but, if the weather permits, adjourn to the garden, where, with Mrs. Unwin and her son, I have generally the pleasure of religious conversation till tea-time. If it rains, or is too windy for walking, we either converse within doors, or sing some hymns of Martin's collection, and by the help of Mrs. Unwin's harpsichord make up a tolerable concert, in which our hearts, I hope, are the best and most musical performers. After tea we sally forth to walk in good earnest. Mrs. Unwin is a good walker, and we have generally travelled about four miles before we see home again. When the days are short we make this excursion in the former part of the day, between church time and dinner. At night we read and converse as before, till supper, and commonly finish the evening either with hymns or a sermon; and, last of all, the family are called to prayers."

The first interruption to his happiness was the death of Mr. Unwin, who was killed by a fall from his horse, about two years after Cowper came to reside with the family. After this melancholy event he retired with the widow to the village of Olney, in Buckinghamshire. Here he continued in the same pious and sequestered habits of life which he had adopted since his recovery, till the year 1772, when a second and more protracted visitation of the dreadful malady with which he had previously been afflicted, obscured his reason for the period of eight years, during which he was attended by Mrs. Unwin with a constant and anxious affection, which it was the great study of his after-life to repay.

In 1780 he began gradually to recover; and one of the first objects that engaged his attention was the taming and education of the three young hares, which he afterwards celebrated in verse: and, very soon after, his kind companion prevailed upon him to prepare some moral pieces for publication, in the hope that the writing them might prove a salutary occupation to his mind. Accordingly, at the age of fifty, and at a distance from all the excitement that emulation and ambition usually hold out to a poet, we find Cowper beginning to write.

His literary pursuits had a very beneficial effect upon Cowper, as appears from his own account, in a letter written to his cousin, where he says:

" Dejection of spirits, which I suppose may have prevented many from becoming an author, made me one. I find constant employment necessary, and therefore take care to be constantly employed. Manual occupations do not engage the mind sufficiently, as I know by experience, having tried many. But composition, especially of verse, absorbs it wholly. I write therefore generally three hours in a morning, and in an evening I transcribe. I read also, but less than I write."

In another letter he observes:—

“ My sole drift is to be useful ; a point which, however, I know I should in vain aim at, unless I could be likewise entertaining. I have, therefore, fixed these two strings upon my bow, and by the help of both have done my best to send my arrow to the mark.”

In another passage, speaking on the subject of his writings, he says:—

“ My labours are principally the production of last winter ; all, indeed, except a few of the minor pieces. When I can find no other occupation, I think ; and when I think, I am very apt to do it in rhyme. Hence it comes to pass, that the season of the year which generally pinches off the flowers of poetry, unfolds mine, such as they are, and crowns me with a winter garland. In this respect, therefore, I and my contemporary bards are by no means upon a par. They write when the delightful influences of fine weather, fine prospects, and a brisk motion of the animal spirits, make poetry almost the language of nature ; and I, when icicles depend from all the leaves of the Parnassian laurel, and when a reasonable man would as little expect to succeed in verse as to hear a blackbird whistle. This must be my apology to you, for whatever want of fire and animation you may observe in what you will shortly have the perusal of. As to the public, if they like me not, there is no remedy.”

His first volume of poetry, which appeared in the year 1781, was not well calculated for becoming popular, and was but little read until the increasing fame of its author brought all his works into notice.

In the latter part of this year, Cowper formed an accidental acquaintance with the widow of Sir Thomas Austen, which in spite of his excessive shyness gradually ripened into a warm and mutual friendship. Many of his most celebrated productions were written in consequence of the suggestions of this lady. Whenever she saw him unusually melancholy, she would endeavour to amuse him by her lively and entertaining conversation.

(*To be continued.*)

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### GUANO.

GUANO, or Huano (the Peruvian name for manure), a substance used as a manure, found on certain small islands off the coast of Peru and Bolivia, and on parts of the shore of the main land. It is friable and easily reduced to powder ; its colour varies from a dull red to a dirty white, and it has a strong smell, and a fat, unctuous feel. At an average it weighs from fifty to sixty pounds a bushel. Humboldt was the first, or one of the first, by whom this important substance was brought to Europe ; but it was described at a much earlier date by Ulloa, and has been used as a manure by the Peruvians from the time of the Incas, downwards. Different opinions have been entertained of its origin. Many have supposed it a peculiar mineral or earth ; but Ulloa is clearly of opinion that it consists of the excrements of the sea birds which are found in prodigious numbers on the coast of Peru. The localities where it is deposited being a rainless region, it is accumulated with a rapidity of which we have no idea. Guano is of very different qualities : some prefer the whitish (supposed to be more recent deposit), others prefer the red. The best is that which contains the greatest quantity of ammoniacal salts. A quantity represented by 100 parts, examined by Klaproth, yielded 16 parts of urate of ammonia,

10 of phosphate of lime,  $12\frac{1}{4}$  of oxalate of lime, 4 of silica,  $\frac{1}{2}$  of common salt, 28 of sand, and  $28\frac{1}{2}$  of water and organic combustible matter.

Guano has only been recently introduced into England; and there is much discrepancy in the statements that have been put forth as to its operation. There can be no doubt that it is a most efficient manure; and that from two to two and a-half cwt. per acre of average guano, mixed with about two-thirds of the usual quantity of farmyard manure, will produce, when applied to well-drained land, nearly double the ordinary quantity of potatoes. It produces splendid crops of turnips, by its own agency only—and has a powerful influence in improving crops of corn. The effect is said to be materially increased by its being covered up to some considerable depth as soon as it is laid upon the soil; and top-dressing is a wasteful way of applying the manure. Since it began to be imported into Europe, an apprehension began to gain ground that the stock might be exhausted, and thus the estates along the coast of Peru, which are cultivated only by its means, might be ruined. The fear however is ascertained to be groundless. At present the guano is principally obtained from some small islands opposite Pisco. The English consul, Mr. Wilson, states that although 300 tons a year have been for centuries exported from Chincha, one of the small islands in question, there are estimated to be on that same island not less than seventeen million tons, and that the supply in the various islands, in the group just alluded to, may be safely estimated at above forty million tons. But exclusive of these islands there are others, as well as the main land, on which guano has been found, that even supposing the quantity just mentioned is an exaggeration, yet for all practical purposes the stock may be deemed inexhaustible.

The quantity of guano imported in the year 1850, amounted to 116,925 tons, of which 95,083 tons came from Peru.

In the year 1845, 283,300 tons were imported from various parts of the world, the Western Coast of Africa supplying 207,679 tons, and 14,101 tons from Peru. The inferior nature of the guano from Africa, is shown from the fact that only 2,953 tons were imported into England in the year 1850.

Many agriculturists believe that, with guano at five pounds per ton, all the difficulties consequent upon the repeal of the Corn Laws would disappear; it is therefore much wished that the Government would either get the present heavy duty upon guano reduced, or would purchase some islands from the Peruvian Government.

The quantity imported from Peru increases rapidly yearly, as we may see from the table below:—

|        | 1846   | 1847   | 1848   | 1849   | 1850  |  |
|--------|--------|--------|--------|--------|-------|--|
| Tons.  | Tons.  | Tons.  | Tons.  | Tons.  | Tons. |  |
| 25,102 | 59,430 | 64,191 | 73,567 | 96,295 |       |  |

M'CULLOCH.

## THE USEFUL ARTS AND MANUFACTURES OF GREAT BRITAIN.



SUGAR PLANTATION.

THE MANUFACTURE OF SUGAR IN  
THE WEST INDIES.

ALTHOUGH the manufacture of sugar in this country consists chiefly in the production of a fine crystalline substance from a raw material, yet no account of sugar can be deemed complete without some account of the plant itself, its cultivation, and the processes adopted, in the countries where it flourishes, for extracting and preserving its juice.

The sugar-cane (*Saccharum officinale*) is a jointed reed, varying in height according to the species, the character of the soil, and the mode of culture, from three and a half to seven feet, and sometimes from twelve to twenty feet. When ripe, it is of a fine straw colour, producing leaves or blades, the edges of which are firmly and sharply serrated, and terminating in an arrow decorated with a panicle. The joints in one stalk vary in number from forty to sixty (and even eighty in the Brazil cane), and the stalks rising from one root are sometimes very numerous. Every joint is furnished with a bud which encloses the germ of a new cane. The young shoot

ascends from the earth like the point of an arrow; the shaft of which soon breaks, and the first two leaves rise to a considerable height.

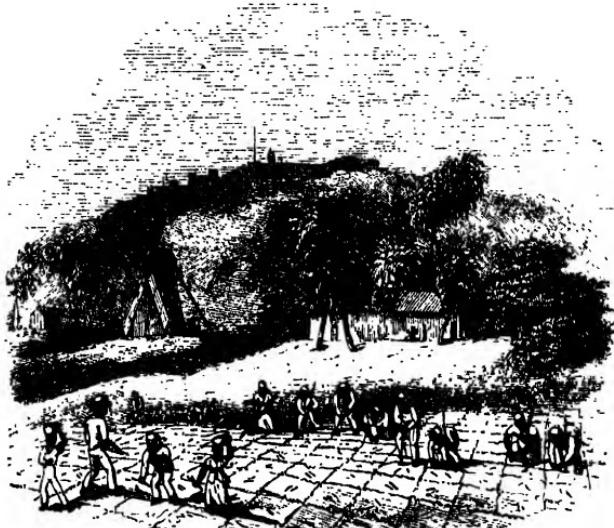
The outer part of the cane is hard and brittle, but the inner consists of a soft pith containing the sweet juice, which at first has all the characteristics of unripe mucous fruits; it afterwards resembles, both in taste and smell, the juice of sweet apples; it gradually loses this, and takes the smell and taste peculiar to the cane.

The torrid zone is most favourable to the growth of the sugar-cane, but it may be cultivated as high as the fortieth degree of latitude. It will not flourish in a merely sandy soil: the best soil is the ashy loam of St. Christopher's or a mixture of clay and sand, called *brick mould*. Due attention to manuring is of the utmost importance to the success of the cane.

The sugar-cane is propagated by cuttings, which multiply surprisingly. The slips for planting generally include two or three upper joints of the cane, stripped of leaves. These are planted in holes from fifteen to eighteen inches square, and from eight to twelve

inches deep, at distances about two feet apart, and in rows three feet apart, spaces being left here and there, for the convenience of carting. Each hole is banked up round its margin with the earth thrown up by the hoe, and manure is put into it. Two or more cuttings are then placed lengthwise in each hole and are lightly

covered up. In about a fortnight the young sprouts appear: some of the earth heaped up round the hole is then put in, and as the plant grows the remainder is gradually added. The young plants are carefully hoed, and all weeds removed. Offshoots are likewise cut away, because they draw off nourishment from the plants.



PLANTING THE SUGAR-CANE

The canes which grow immediately from the planted slips are called *plant-canæs*; but it is customary, in the West Indies, to raise several crops from the old roots, or *stoles*, as they are called; and the sprouts from these stoles are named *rattoons*, a corruption of the French word *rejetons* (sprouts).

The above method is subject to many variations, according to circumstances, among which may be mentioned the following:—The slips which are planted in August and September are managed as before till January, when the young plants are cut close to the ground, and the remainder of the mould is spread over the roots, which soon afterwards send forth a number of vigorous shoots of equal growth. By this method the canes are not too rank in the rainy season, while they come to perfection in good time in the succeeding spring.

The best season for planting is between August and November, and the cane varies from ten to twenty

months in arriving at maturity. If the soil be favourable, the canæs planted at proper distances from each other, and the land carefully managed, the same plant may continue above twenty years without replanting; but in the common method the lands are sometimes replanted every six or seven years, and in poor soils every two or three.

But in spite of all the care of the planter, the sugar-cane is liable to many diseases. The most formidable is called *blast*. It is produced by myriads of little insects, invisible to the naked eye, which feed upon the juice of the cane, in search of which they wound and destroy the vessels. Hence, the circulation being injured, the growth is checked, and it withers or dies. In some of the Windward Islands a kind of grub, called the *borer*, in dry weather, commits great ravages on the cane. Rats and ants do some mischief, but the latter are more annoying than destructive.

About the month of March or April the cane has attained maturity, as indicated by the skin becoming smooth, dry, and brittle; by the heaviness of the cane, and the juice being sweet and glutinous.

The following description of a field of sugar-canies, at two periods of its growth, is by an eye-witness:—

"A field of canes, standing in the month of November, when it is in arrow, or full blossom, is one of the most beautiful productions that the pen or pencil can possibly describe. It commonly rises from three to eight feet, or more, in height; a difference

of growth that very strongly marks the difference of soil, or the varieties of culture. It is, when ripe, of a bright and golden yellow, and, where exposed to the sun, is in many parts very beautifully streaked with red; the top is of a darkish green, but as it becomes more dry, from either an excess of ripeness or a continuance of drought, it is of a russet yellow, with long and narrow leaves depending, from the centre of which shoots up an arrow like a silver wand, from two to six feet in height, the summit having a plume of white feathers, delicately fringed with lilac."



THE CANE HARVEST.

In gathering in the canes, they are cut as near the ground as possible, as the lower joints contain the richest juice. One or two of the top joints, in which the juice is not sufficiently matured, are rejected; the remainder are cut into piccos about a yard long, tied into bundles, and conveyed immediately to the mill; for, if allowed to remain long, they would ferment and spoil.

As soon as the canes have arrived at the mill they are crushed between rollers, by which means all the juice is expelled. The rollers are hollow cylinders of cast iron, turned with the greatest care, and fluted with grooves of small depth. They are three in number, and measure from thirty to forty inches in length, and from twenty to twenty-five inches in diameter. They may be arranged either vertically

or horizontally, and the middle roller, to which the moving power is applied, turns the other two by means of cogs. The canes are twice compressed between these rollers; for, having passed through the first and second, they are turned round the middle one by a circular screen, called the *dumb returner*; and forced back through the second and third, an operation which squeezes them completely dry. The cane-juice is received in a leaden bed, and thence conveyed to the boiling-house. The rind of the cane, called *cane-trash*, serves for fuel to boil the juice; and it is also valuable as manure.

The fresh juice is thick, and gummy; of a dull grey, olive, or olive-green colour, and of a sweet balmy taste. It contains numerous solid particles of the cane, most of which

can be separated by filtering or by settling. The juice is so fermentable, that in the climate of the West Indies, it would begin to turn acid within twenty minutes after leaving the mill, unless promptly boiled, and the sugar separated.\*

The juice is quickly conveyed into large flat-bottomed coppers, or open pans, called *clarifiers*, which commonly contain from 300 to 400 gallons each. A fire is placed under each vessel, and a siphon, or stop-cock, is supplied for drawing off the liquor. When the clarifier is filled with juice, a small quantity of lime, called *temper*, is added, the object of which seems to be to correct acidity, and also, by

rendering the solid impurities insoluble, to cause them to be thrown up into the scum. As the liquor becomes hot, this scum rises to the surface, and shortly before the boiling point is attained it forms blisters, and breaks into white froth. The fire is then extinguished, and the liquor allowed to repose during one hour, when it is carefully drawn off without disturbing the scum, which sinks unbroken, and is removed from the clarifier before another charge of juice is added. In this process, if the juice were allowed to boil, the scum would be broken up, and reabsorbed by the liquor.



BOILING-HOUSE.

The clarified juice, which is of a clear bright yellow wine colour, is next removed to the largest of a series

of evaporating pans, which are placed over a large stove heated by a fire at one end. Here the juice is suffered to boil, and the scum, as it rises, is carefully removed, lime-water being occasionally added if the juice is not clear. When sufficiently reduced in bulk by evaporation to be contained in the second or middle-sized pan, the juice is transferred, and the boiling and scumming repeated until it is sufficiently reduced to be contained in the third or smallest pan, called the *teache*. In this vessel it is boiled down to a thick syrup, which, on cooling, will *granulate*, or separate into grains of sugar. The required consistency is ascertained by taking a small portion of the syrup upon the

\* The juice, as it flows from the mill, contains, on an average, eight parts of pure water, one part of sugar, and one part of coarse oil and mucilage, with a portion of essential oil. The object of the subsequent operations is to separate this one part of sugar. In St. Vincent one pound of sugar is obtained from each wine-gallon of the best cane-juice; twenty gallons of juice, of middling quality, afford only sixteen pounds of sugar; and when the juice is watery, twenty-four gallons are required to produce the same quantity of sugar. Peligot says that out of every ten parts of juice nearly two parts are sugar, and that if more scientific methods of separating the sugar were adopted, little or no treacle would be produced.

thumb, then bringing the fore-finger in contact with it, and again separating them, noting the length to which a thread of syrup can be drawn before it breaks: if this extends to about half an inch in length, the sugar is judged to be fully boiled. This trial by the touch is supposed to give the name of *teache* to the last evaporating pan.

The syrup is next ladled or *skipped* into shallow wooden boxes, called *coolers*, each capable of containing about a hogshead of sugar. There the sugar soon *grains*; that is, it forms into a soft mass of crystals imbedded in molasses, which are the uncrystallizable part of the sugar. The molasses are separated in the *curing-house*, to which the soft sugar is next removed. This is a large building, the lower part of which is lined with lead, and forms the molasses reservoir. Over this, on an open framing of joists, are placed the sugar-hogsheads, called *potting-casks*. In the bottom of each cask are bored several holes, an inch in diameter, into each of which is placed either a plantain stalk or a crushed cane of sufficient length to reach the top of the hogshead. The soft sugar is then removed to these casks, and the molasses gradually drain away through the spongy stalks or canes, leaving the crystalline portion tolerably dry. In about three weeks it is fit for shipment. A further drainage of molasses takes place subsequent to shipment, amounting, it is said, to no less than 12 per cent.

Such is the *raw*, *brown*, or *muscovado* sugar of the West Indies, which is used for domestic purposes, and also

by sugar-refiners in making *white* or *loaf* sugar. But there is another kind, very common on the continent, called *Clayed* or *Lisbon* sugar, the produce of the Island of Cuba, the Brazils, and other places. The cane-juice is prepared much in the same way as in the West Indies, until it arrives at the coolers, when, instead of being transferred to hogsheads, it is placed in conical earthen moulds, called *formes*, or *pots*, each of which has a small hole at the point. These holes being plugged up, the moulds are placed, with the point downwards, into earthen jars. The moulds are then filled with syrup, and allowed to repose during fifteen or twenty hours. The plugs are next taken out, and the uncrystallized syrup allowed to flow out. The sugar is then pressed down, and the space filled up with powdered white sugar; this being also well pressed down, a quantity of *clay*, mixed with water, is placed upon the sugar, and the moulds are removed to empty pots. The moisture from the clay, filtering slowly through the sugar, carries away the colouring matter and the remaining portions of the uncrystallized syrup. The clay having parted with its moisture is taken off, and renewed several times during about twenty days, when the process is complete. The loaves are then taken out of the moulds, dried gradually in a stove, and afterwards each loaf is divided into three portions; the base of the cone being white, the middle yellow, and the small part brown; these are crushed into coarse powders and packed separately in hogsheads.

#### READY MONEY.

IT makes a great difference to comforts and character, whether a man buys his goods at the shop as he wants them, and then pays for them on the Saturday night; or, whether he carries the money in his hand when he purchases the goods. In one case, he will always have the feeling of being in easy circumstances; in the other, he will always feel that he is a poor man; yet, in both cases he will have the same income, and spend the same, except that, when he has the ready money, he can go to what shop he pleases, and so make his money go much further; and the shop-keeper, too, is much more glad to see him, and thinks better of him. Now, all this difference is made by just contriving to have one week's pay forward, instead of backward; to live, not one week under another, but one week over another.

THE  
**HOME FRIEND;**  
A WEEKLY MISCELLANY OF AMUSEMENT AND INSTRUCTION.

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TUNBRIDGE WELLS.



THE TOAD ROCK NEAR TUNBRIDGE.

THE town of Tunbridge, from which the celebrated springs derive their name, is supposed to be so called from the several bridges which are built over the five streams of the river Medway in their current through the town. The views of its venerable castle are conspicuous for many miles, and to this once important fortress, the town of Tunbridge was little more than the suburbs. The extensive building, encircled with three moats, the innermost of which was formed by a new stream dug for the purpose, and now the principal current of the Medway, was, for many hundred years,

the alternate seat of war and festivity, one of the four depositaries of the deeds and charters of the realm, and during the wars of the barons, considered to be a stronghold of no little importance. Its moats were capable of being filled or emptied at pleasure by means of a large weir or bank, which extended for the space of two miles, and formidable were the sieges which it sustained. In the reign of Henry III., Gilbert Earl of Gloucester, then its owner, having associated with the rebellious barons, was besieged in it, by the king in person, who after burning the town, took the fortress, which remained in the possession of the crown for many years, was ultimately conferred on the Dukes of Buckingham, and has given a title to many noble families.

The noted resort for invalids, Tunbridge Wells, is about five miles from the town, forming the centre of a number of scattered groups of dwellings, part of which are in the parish of Speldhurst, Kent, and the remainder in that of Frant, Sussex. These have been called Mount Ephraim, Mount Pleasant, Mount Sion, and the Wells; and near the latter are the markets, chapels, assembly-rooms, and public promenades called the Upper and Lower Walks.

The whole forms a kind of amphitheatre on hills, presenting a highly picturesque background. The singular undulations of the scenery has been accounted for by Dr. Mantell, who observes, "The hills and vales have been produced by the displacement which the strata have suffered during their immersion, from the depths of the water: this elevation was, in all probability, not sudden, but gradual, and in the changes some of the highest peaks would first appear above the waves, constituting a group of islands, which, from the accumulation of fossils, fruits, &c., at Sheppey, appears to have been soon clothed with vegetation, that could not exist in our present climate. During the process, valleys would be scooped out by currents, the sharp edges of the rocks rounded by diluvial action, and accumulations of *débris* be formed in the undisturbed depths of the ocean."

The discovery of the springs which have rendered this romantic spot so popular, is said to have been made by Dudley Lord North, one of the most distinguished courtiers of James II. Residing at his seat in the neighbourhood for the benefit of his health, he was led during a ramble in the wood, where the springs arise, to judge from their appearance that they possessed medical virtues. He consulted his physicians on the subject, tried the waters in his own case, and tradition tells us was cured of a lingering consumptive disorder by their healing properties. The virtues of the chalybeate springs were then made known, and so highly appreciated that the spot soon became a favourite place of resort. In course of time the lord of the Manor cleared the ground, and discovering seven springs, wells were sunk, a stone pavement laid around, and the whole was enclosed by wooden railings. Among the visitants of the year 1630, was numbered Queen Henrietta Maria, the consort of Charles I.; and as there were no houses then erected near the springs, her Majesty and suite encamped on Bishop's-down, where they remained six weeks, "enjoying masques and dances," a species of amusement of which the young queen in her days of prosperity was very fond.

It is related, that she one day wandered alone to some distance from the encampment, and feeling weary, sat for rest and refreshment under a birch tree in the neighbouring wood; and in grateful remembrance of the event, commanded that a stone should be placed on the spot. A complimentary

inscription was engraved on it by one of her Majesty's attendants, but the rude partizans of Oliver Cromwell prevented it from reaching posterity. The "Queen's stone" was built on the spot where the monument was placed, but the inscription is nowhere preserved.

The first buildings which sprung up at the Wells were of a very humble description, but a green bank was raised and a double row of trees planted to shelter the visitors from the heat of the sun, and in the year 1664, Lord Muskerry, the lord of the Manor, built a hall, and a strong stone wall round the springs, and placed a basin over the main spring, "all which was done in honour of Queen Katharine of Braganza, who was sent to Tunbridge Wells to recruit her health, then suffering from the effects of a dangerous fever," and where her Majesty remained about two months, surrounded by the gay court of Charles II.

A writer of that period tells us "that they were accommodated with lodgings in little clean and convenient habitations that lie straggling and separated from each other, a mile and a half round the Wells, where the company meet every morning." "The place," he adds, "consists of a long walk, shaded by pleasant trees, under which they walk while drinking the waters. On one side of this walk is a long row of shops plentifully stocked with all manner of toys, laces, gloves, stockings, and where there is raffling, as at Paris. On the other side of the walk is the market; and as it is the custom here for every person to buy their own provisions, care is taken that nothing offensive appear on the stalls. Here, young fair fresh-coloured country-girls, with clean linen, small straw hats, and neat shoes and stockings, sell game, vegetables, flowers and fruit. Here, one may live as one pleases, everything breathes mirth and pleasure. As soon as the evening comes, every one quits his little palace to assemble on the bowling-green, where, in the open air, those who choose, dance upon a turf more smooth and soft than the finest carpet in the world."

Queen Anne also patronized the waters of Tunbridge, and added another basin over the Wells, the water of which, in spring, is very bright and clear, tasting strongly of steel, but having scarcely any smell, though sometimes in a dense air, the ferruginous exhalations are very distinguishable. In point of heat, it is invariably temperate, the spring lying so deep in the earth, that neither the summer heat nor winter cold affect it. When taken up in a large glass, its particles continue at rest, till it is warmed nearly to the heat of the atmosphere, when some airy globules begin to separate and adhere to the glass, and in a few hours, a light copper colour scum begins to float on the surface, and an ochreous sediment settles at the bottom. Long continued rains give it a milky appearance, but affect it in no other way. From the experiments of different physicians it appears that the component parts of the water are steely particles, marine salts, an oily matter, an ochreous substance, simple water, and a volatile vitriolic spirit, too subtle for any chemical analysis. In weight, the water is in seven ounces and a quarter, four grains lighter than the German Spa (to which it is preferable on that account), and ten grains lighter than common water. The produce of these Wells is said to be an impregnation of rain in some of the neighbouring eminences, which abound in iron mineral, where it is further enriched with the marine salts, and all the valuable ingredients constituting it a light and pure chalybeate, adapted to most cold chronic complaints, lowness of spirits, weak digestion, and nervous complaints of every description.

The air of the neighbourhood is eminently pure and salubrious, and

the bold and picturesque scenery possesses great attractions for visitors. The High Rocks, about one mile and half from the Wells, are a favourite resort, and are said to have been first brought into notice by King James II., who, when Duke of York, repaired to the Wells, and dwelt in tents at this spot, with his duchess and two daughters, afterwards Queens Mary and Anne.

In our slight sketch of the Wells we must not pass unnoticed the manufacture of Tunbridge ware, for which the neighbourhood has been so long celebrated, and which is indeed now plentifully carried on at the Wells. From the humming-top and smallest toy, to cabinets, cases, tables, boxes, &c., the turnery ware still continues to be made from native woods, such as the holly, beech, yew, plum, cherry, stem of furze, broom, white and black thorn, &c. Upwards of forty varieties of native wood are thus employed, and since the introduction of mosaic work, partly coloured foreign wood of every description has also been used. In 1826 the inhabitants presented to Her Majesty (then Princess Victoria), perhaps the most beautiful specimen of their manufacture ever produced, in the form of a combined writing, reading, and work table, veneered with a vast variety of coloured woods, home and foreign, the whole supported by a tripod of solid carved wood, and fitted up with costly elegance.

The markets of Tunbridge offer a delicacy in the way of eating, which, before the days of railroads, could scarcely be tasted in true perfection anywhere else—we allude to the wheat-ear, or English ortolan—a bird, like its Italian namesake, of about the size of a lark, and consisting mostly of fat, a peculiarity which, from its being in season only during the summer, formerly prevented its conveyance to the London markets without injury to the delicate flavour of the bird. To the botanist the neighbourhood of the Wells presents many attractions, though the numerous new inclosures and system of bog-draining have considerably lessened the number of rare plants, once found here in great abundance. *Splachnum ampullaceum* (purple bottle moss), which grew on the bog in Waterdown Forest, near the High Rocks, is not now to be met with; and the little, scarce plant, *Blasia pusilla*, or Dwarf *Blasia*, has also quite disappeared. But the *Convallaria majalis* (lily of the valley); *Dianthus armeria* (Deptford pink); *Orobanche elatior* (all broom rape); many curious varieties of *Ophrys* and *Orchis*, with other floral treasures, are still to be gathered, as welcome prizes for the herbarium.

The drainage and enclosures, to which we have just alluded, have also had their wonted effect on the temperature of the air; for rocks and cliffs, which formerly used to be clothed with lichens, mosses, and ferns, are now become so dry, that such plants no longer, by their rich profusion, court the attention of the botanist. He will still, however, find many valuable Cryptogamic specimens; and, in addition to the following list of ferns, may secure one, which took its name of *Hymenophyllum Tonbri-giense* from its locality.

|                             |   |   |                          |
|-----------------------------|---|---|--------------------------|
| <i>Polypodium vulgare</i>   | - | - | Common Polypody.         |
| <i>Aspidium Thelypteris</i> | - | - | Marsh "                  |
| " <i>Oreopteris</i>         | - | - | Heath "                  |
| " <i>Filix mas</i>          | - | - | Male Fern. "             |
| " <i>aculeatum</i>          | - | - | Common prickly Polypody. |
| " <i>lobatum</i>            | - | - | Lobed prickly "          |
| " <i>Filix fœmina</i>       | - | - | Female "                 |
| " <i>irriguum</i>           | - | - | Spring "                 |

|                                  |   |                              |
|----------------------------------|---|------------------------------|
| <i>Aspidium spinulosum</i>       | - | Lesser-crested Fern.         |
| " <i> dilatatum</i>              | - | Great-crested Fern.          |
| <i>Asplenium Trichomanes</i>     | - | Common Maiden hair.          |
| " <i>Ruta muraria</i>            | - | Wall rue, White Maiden hair. |
| <i>Adiantum nigrum</i>           | - | Black Maiden hair.           |
| " <i>lanceolatum</i>             | - | Spear Maiden hair.           |
| <i>Scolopendrium vulgare</i>     | - | Common Hart's tongue.        |
| <i>Brechium boreale</i>          | - | Rough Spleen-wort.           |
| <i>Pteris aquilina</i>           | - | Common brakes.               |
| <i>Pteris <math>\beta</math></i> | - | Fine-leaved common brakes.   |
| <i>Pilularia globulifera</i>     | - | Pillwort.                    |
| <i>Osmunda regalis</i>           | - | Flowering Fern.              |

On Rustall Common, in the vicinity of the Wells, are some singularly formed rocks, well worthy of a visit from the tourist; while the once magnificent, but now decayed, mansion of Penshurst, formerly the residence of Sir Philip Sydney, is also within a short distance. Its beautifully wooded park is now in part converted into hop-grounds, and divided into distinct enclosures; but this, as well as the noble mansion, still retains enough of its original outline to convey an adequate idea of its former grandeur.

## A VISIT TO AUSTRALIA AND ITS GOLD REGIONS.

## THE VOYAGE.

It was about eight o'clock on a fine summer's evening when we went on board our vessel at Plymouth. The sun had set in all his splendour; the new moon, red with the hues of evening, hung just over Mount Edgecombe; twilight was gathering around us, and all nature was so still and beautiful that we forgot to think how many were quitting the shores of their native country, perhaps for ever. The little groups of friends, assembled on the beach to catch the last farewell glimpse, were soon lost to our sight, and the sombre shades of night gathered around us. In a few minutes more we exchanged this scene of repose for the bustle ever attendant on the first evening of the departure of an emigrant ship.

The next morning, about four o'clock, we were awakened by the noise of the sailors above our heads, hoisting sail, and raising the anchor; and when we went on deck, at eight o'clock, we found that the vessel was outside the Breakwater, and that we had really commenced our voyage; and in the evening, although the wind was rather against us, the shores of Old England could scarcely be distinguished from the clouds that were gathered along the horizon.

Everything in a life on board ship being new to us, our attention was fully occupied for the few first days. We felt ourselves, as it were, in a new world, and we scanned every feature of it with the same relish with which a child inspects a fresh toy; or rather, perhaps, with the same deep interest with which a philosopher examines an unknown specimen of nature's works. The novelty, however, was soon over; we were speedily accustomed to the change, and we then began to think of the many weeks which would elapse ere we should reach our destination, and of the probable dreariness of such a lengthened absence from the land.

There is scarcely any conceivable position, however, in which we can be placed, wherein an intelligent mind may not find ample source of interest and instruction; and a sea voyage, so far from being the monotonous thing we should at first imagine, offers the most delightful opportunities "to look

through nature up to nature's God" that an observing man can desire. It is the more delightful, inasmuch as there is such a total absence of all the ordinary cares of this life: all things are provided for you; you have only to eat; drink, and be merry, and you have ample time to observe and ponder on the vast beauties of the mighty deep. The change from one climate to another, so marked because so sudden; the daily companionship with creatures strange and wonderful, that constantly surround the ship; the grandeur and ever-varying loveliness of the vast expanse of sea and sky; the occasional meeting with other vessels; and the deep excitement felt when approaching within sight of land—be it but a solitary and barren island—all contribute to render a few months' sojourn on the waters a source of extreme gratification.

We had not proceeded far on our path across the trackless waste, before we were enlivened by the visits of those cheerful little birds, the petrels,—the constant companions of the sailor, by whom they are familiarly called "Mother Carey's Chickens." They are peculiarly ocean birds, rarely approaching the shores, except when they seek gloomy and inaccessible rocks for the purpose of incubation. Scarcely larger than the swallow, one wonders that so frail a bird should dare to brave the fury of the tempest! but when the masts are creaking, and the cordage shrieking in the fierce blast, and when the sea is lashed into mountainous waves, whose foaming crests are torn off in mists by the fury of the gale, the little petrel flits hither and thither, now treading the brow of the watery hills, now sweeping through the valley, piping its singular note with as much glee as if it were the very spirit of the storm, which the superstitious mariner attributes to its evil agency. Flocks of these little birds often accompany ships for many days successively; not, as has been asserted, to seek refuge from the storm, but to feed on the refuse particles which the cook now and then throws overboard, or on the floating substances which the motion of the ship may bring to the surface. It is a pleasing sight to see them crowd up close under the stern, with confiding fearlessness, their sooty wings extended horizontally, and their tiny web-feet put down to feel the water while they pick up the minute atoms of food of which they are in search. They seem to have the power of dispensing with sleep for very long intervals. Wilson, one of the most accurate observers, has recorded a fact in illustration of this: "In firing at these birds, a quill feather was broken in each wing of an individual, and hung fluttering in the wind, which rendered it so conspicuous among the rest that it was known to all on board; this bird, notwithstanding the inconvenience, continued with us for nearly a week, during which time we sailed a distance of more than four hundred miles." It is stated that these birds are never known to alight on any part of the ship, or its rigging. Is it not a pity that such interesting little creatures should become the object of a meaningless superstition? The persuasion that they are, in some mysterious way, connected with the creation of storms, is so prevalent among seamen, that these birds are objects of general dislike—nay, hatred—and the sailors will occasionally give vent to execrations against these "devil's imps," as they call them, when a gale happens to follow, or be accompanied by, their visits.

No inconsiderable degree of interest was experienced when we arrived in sight of any of the islands which lie in the track of vessels to Australia. We passed the beautiful island of Madeira, and close by the Canary Islands, on one of which stands the lofty peak of Teneriffe. Further on we sighted the little Island of Ascension, from which large supplies of turtle are ob-

tained ; and still further on we caught a glimpse of the lonely rock of St. Helena, where the Emperor Napoleon spent the closing years of his eventful life. When we were nearing any of these places, every one anxiously strained his eyes towards that part of the horizon which was pointed out. By-and-by the shout of "Land ho!" would strike upon every ear with the effect of an electric shock ; every eye was instantly on the alert ; but we landsmen looked long in the direction of the seamen's finger before we could satisfy ourselves that we were gazing on anything more than evanescent cloud. "Now," we said confidently, "now we can see it." Meanwhile the ship would rush on before a cheerful breeze, we would go below to breakfast, and on our return to deck, there would be no longer room for doubt, for there, straight before us, would lie the land high and blue above the water.

We had not been many days at sea before we began to observe that the sun daily attained a more elevated position at noon, while the pole-star nightly drew nearer and nearer to the horizon, distinctly telling us of our rapid progress southward. We soon also got within the influence of those never-failing assistants to our progress, the "trade winds,"—and it is as well always to be prepared for the approach to their vicinity, as our first notification of their proximity was the sudden upsetting of everything movable in the ship, ourselves included. Propelled cheerily on our course by these beneficent winds, we soon reached the tropics ; every day, at noon, we saw the sun reaching to a higher and a higher point, until it appeared, directly above our heads. The wind gradually became lighter until we arrived at the calm latitudes, where we lay for two long weeks without making any progress. The captain and the crew whistled for wind with as much perseverance as though they had never been disappointed, and every one watched anxiously for the least breathings of a breeze. Nothing can exceed the tantalizing tedium of this condition ; our wearied eyes gazed intently on the glistening sea, and eagerly watched the slightest ruffling of its mirror-like surface ; but on glancing at the feather-vane on the ship's quarter, our hopes faded as we perceived it hanging motionless upon its staff. A still more delicate test was then resorted to—a hot coal was thrown overboard, and we all anxiously watched the little cloud of white steam to see if there was a trace of any side motion in the ship ; but no ! the vapour ascended perpendicularly till it dispersed in air. Now and then the polished surface of the ocean suddenly changed into a blue ripple. Expectation became strong, for there was no doubt of the reality of the motion ; but, before the sails could feel the breeze it had died away again ; the air was as still, and the sea as glassy as before. Not a cloud intercepted the fierce burning ray of the sun, which poured down directly on our heads. The decks became burning hot to the feet ; the melting pitch boiled up from the seams ; the tar continually dropped from the rigging ; the masts and booms displayed gaping cracks ; and the flukes of the anchors were too hot to be touched. In vain we sought refuge beneath the sails which hung lazily from the yards, for so perpendicular were the fiery beams at noon-day that scarcely a shadow was thrown anywhere, and even that little was constantly shifting from the change of the vessel's position in the swell.

Yet, though day after day rolled on and left us still in the same position, there were many things to beguile the weariness of the time. The gorgeous beauty of the setting sun almost made amends for his unmitigated heat by day. As his orb approached the western horizon, the clouds, which had been absent during the day, began to form in that quarter of the heavens,

and, as he sank, to assume hues of the richest purple, gorgeously edged with gold,—now hiding his disc, now allowing him to flash out his softened effulgence through crimson openings, till he set beneath the mountain-like clouds that seemed to lie heavily upon the surface of the sea. Then the whole array began to take the appearance of a lovely landscape, the clouds forming land, and the open sky seeming like calm water. Sometimes, we fancied we saw the long capes and bold promontories of a broken and picturesque coast, deeply indented with bays and creeks, and fringed with groups of islands; at other times silvery lakes, studded with little wooded islets, appeared, embosomed in mountains or surrounded by gentle slopes, here and there clothed with umbrageous woods; and often such an appearance of reality had these fleeting scenes that it was difficult, after gazing at them for a few minutes, to believe that they were mere passing shadows. The mind forgot the world of waters around, and, in the enthusiasm of the hour, flew in busy imagination to that beautiful land, and roamed among its hills and valleys in dreamy enjoyment.

These beautious scenes were, however, as transitory as they were lovely. Near the tropics night comes on with a rapidity quite startling to those accustomed to the long twilight of northern latitudes. The rich hues with which the western sky is suffused, the crimson and ruddy gold, change speedily to a warm and swarthy brown. One by one the stars come out, and light up the sky with a strange and unwonted lustre. "From the time we enter the torrid zone," says Humboldt, "we are never wearied with admiring, every night, the beauty of the southern sky, which, as we advance towards the south, open new constellations to our view. We feel an indescribable sensation when, on approaching the equator, and particularly in passing from one hemisphere to another, we see those stars which we have contemplated from our infancy progressively sink, and finally disappear. Nothing awakens in the traveller a livelier remembrance of the immense distance by which he is separated from his country than the aspect of an unknown firmament. The grouping of the stars of the first magnitude, some scattered nebulae, rivalling in splendour the Milky Way, and tracts of space remarkable for their extreme blackness, give a particular physiognomy to the southern sky. This sight fills with admiration even those who, uninstructed in the branches of accurate science, feel the same emotions of delight in the contemplation of the heavenly vault as in the view of a beautiful landscape, or a majestic river. A traveller has no need to be a botanist to recognise the torrid zone on the mere aspect of its vegetation; and without having acquired any notions of astronomy, he feels he is not in Europe, when he sees the immense constellation of the Ship, or the phosphorescent Clouds of Magellan, arise on the horizon. The heavens, and the earth, everything, in the equinoctial regions, assume an exotic character."

Between, or in the neighbourhood of the tropics, our ship was rarely unaccompanied by fishes of many species, which, in the clear waters, were visible for many fathoms beneath the keel. The most common, and perhaps, the most beautiful, were the coryphene, miscalled by seamen the dolphin. We were never weary of admiring their beauty. Their form is deep, but thin and somewhat flattened, and their sides are of a brilliant pearly white, like polished silver. In small companies of five or six they usually appear and play around and beneath the ship, sometimes close to the surface, and sometimes at such a depth that our eyes could but dimly discern their shadowy outline. Night and day these interesting creatures are sporting about, appearing insusceptible of weariness. Their motion is

very rapid when their full powers are put forth, as in the pursuit of the little flying-fish. It is to the coryphene that most accounts of dolphins which we read of in voyages must be referred, as, owing to some mistake of identity not easily accounted for, the name of dolphin has been almost universally misapplied by our seamen to the coryphene, while they confound the true dolphin with the porpoise.

The appearance of a number of porpoises is generally an event of interest, as the opportunity of securing one is seldom neglected. In these cases, as soon as the striker is named, every one rushes to the most available point for getting a full view of the operations. Presently a fish will present his side, the harpoon will be thrown, but, from excitement or over-eagerness, perhaps without success. Then again there is a stir; another monster is rolling towards the boat. This time a more careful aim is taken; the harpoon flies from the striker's hand; in an instant the white spray from the bow becomes crimsoned with the rush of blood, and we know that the spear has done its duty. Now all is confusion; some are cheering, others are calling to the man at the rope, "Pull away, or the fish will get under the bow;" whilst many, alarmed for the safety of those who, on the fish being struck, are pressing forward to the most dangerous situations, are shouting to them to get back to the ship. Amidst the confusion the poor porpoise is soon brought to the edge of the water, the blood issuing in a flood from the wound in its side; but its strength is still immense, and it is not until a rope has been bound round the body that with great difficulty it is brought on deck.

In a few minutes the head is off, and the greater part of the skin and blubber is removed from the body. All are anxious to possess a share of the spoil, so much salt provisions having rendered the porpoise an anticipated luxury, and all crowd round the carvers with bustling eagerness. The carcase is soon cut up, and distributed; and the next morning the frying-pans, stew-pans, and all other pans, are in active requisition: breakfast off broiled porpoise gladdens every heart; and such is the relish with which it is devoured, that we may easily conceive how little quarter or pity will be shown to the next shoal that may come in our way.

Another visitant who very freely gives us much of his company is the white shark, probably the most terrific monster that cleaves the waves; certainly the most hated and at the same time feared by the sailor. The catching of fish is at all times a pleasing amusement to the mariner; but in catching the shark there is a peculiar avidity, in which the gratification of a deep-seated hatred of the species, and vengeance for his murderous propensities, form the leading features.

When a shark is taken, whether entrapped by the concealed hook, or struck by the open violence of the harpoon, and brought on deck, he is subjected to every indignity which an insane fury can heap upon him; beat, stabbed, and kicked, and even reviled as if capable of understanding language. In truth, there is no animal, terrestrial or aquatic, which, so to speak, has "villain" written on its countenance so legibly as the shark. The shape of the head, and the form of the mouth, opening so far beneath, are anything but prepossessing; and there is a peculiar malignity in the expression of the eye, that seems almost satanic, and which one can never look upon without shuddering. The mouth is armed with teeth of a very peculiar construction; they are triangular in form, thin and flat, the central part being thicker than the edges, which are as keen as a lancet, and cut into serratures like a saw. In very large sharks the teeth have

been found nearly two inches in breadth. They are placed in rows, sometimes to the number of six, one within another, lying nearly flat when not in use, but erected in a moment to seize prey; and as they are so placed in the jaw that each tooth is capable of independent motion, being furnished with its own muscles, and as the power of the jaws is enormous, they form the most terrific and formidable apparatus for the supply of a carnivorous appetite.

The fatal voracity of the shark is well known. Instances are numerous of swimmers in the tropical seas having been severed in twain at one snap, or deprived of limbs; while on more than one occasion the whole body of a man has been taken from this living sepulchre. Yet after all, this sanguinary voracity is but the result of an unerring instinct, without the exercise of which its life could not be sustained; and it is therefore perfectly absurd to entertain feelings of personal revenge against it.

Every one may imagine how much the tedium of a long voyage is relieved by the company of other vessels, or even by the speaking of a passing ship; but few who have only seen vessels lying in tiers side by side at quays or wharfs, are at all aware of, or can readily understand, the anxious care with which commanders guard against two ships on the high sea coming within even a considerable distance of each other. Passengers on their first voyage, when a vessel is speaking at what they think a most uncivil distance, often wish that they would come nearer, particularly if the wind is light. Little do they think that when it is a perfect calm, the dread of contact is then the greatest, as if there be wind enough to give the vessel "steerage way," she is under control, and the danger may be avoided. Captain Basil Hall says on his subject: "How it happens I do not know; but on occasions of perfect calm, or such as appear to be perfect calm, the ships of a fleet generally drift away from one another, so that at the end of a few hours the whole circle bounded by the horizon is speckled over by these unmanageable hulks, as they may for the time be considered. It will occasionally happen, indeed, that two ships draw so near in a calm, as to incur the risk of falling on board one another. I need scarcely mention, that even in the smoothest water ever found in the open sea two large ships coming into actual contact must prove a formidable encounter. As long as they are apart, their gentle and rather graceful movements are fit subjects of admiration; but this admiration changes to alarm when ships come so close as to risk a contact; for these motions which appear so slow and gentle to the eye are irresistible in their force, and as the chances are against the two vessels moving in exactly the same direction at the same moment, they must speedily grind or tear one another to pieces. Supposing them to come in contact side by side, the first roll would probably tear away the fore and main chappnels of both ships; the next roll, by interlacing the lower yards, and entangling the spars of one ship with the shrouds and backstays of another, would, in all likelihood, bring down all three masts of both ships in one furious crash. Beneath the ruins of the spars, the coils of rigging, and the enormous folds of canvass, might lie crushed many of the best hands, who, from being the foremost to spring forward in such seasons of danger, are surest to be sacrificed. After this first catastrophe the ships would probably drift away from one another for a little while, only to tumble together again and again, till they had ground one another to the water's edge, and one or both of them would fill and go down. In such encounters it is impossible to stop the mischief; and oak and iron break and crumble in pieces like sealing-wax and pie-crust. Many instances of

such accidents are on record, but to prevent these frightful rencontres care is always taken to hoist out the boats in good time, and, if need be, to tow the ships apart ; or, what is generally sufficient, to tow the ships' heads in opposite directions. It is scarcely known why this should have the effect ; but it certainly appears that, be the calm ever so complete, or dead, as the term is, a vessel generally forges ahead, or steals along imperceptibly in the direction she is looking to ; possibly from the conformation of the hull."

These accidents, however, are exceedingly rare ; the very danger, by the watchfulness it causes, tending to prevent their occurrence : and vessels can always approach with sufficient nearness, without risk of collision, to carry on a correspondence or conversation. We shall never forget the bustle and excitement caused by the intelligence of a homeward-bound sail in sight ; and when to our great delight she came within hail, and we heard that the captain, finding we had newspapers, expressed his determination to come on board, there was a simultaneous rush below, and pens, ink, and paper were in such request that a dealer in stationery would have realized a little competency. Then came the questions, Where are we ? What is the day of the month ? How long shall we have to write ? and the pens flew over the surface of the paper like lightning. Meantime the captain had come on board, and word was soon brought that he was ready to leave. Hasty terminations, and the delightful intelligence to dear friends at home that all was well, were soon completed.

One man brought an open sheet of paper to the captain covered with letters of enormous size, which, no doubt, his friends would understand ; but he had quite forgotten to mention who his friends were : and had not this deficiency been seen by some one near, the letter would have been of little service. All business matter being completed, the stranger captain went over the side. Presently another letter was seen emerging from the hold ; this also was without direction. " You are too late, Pat," was heard on all sides ; but Pat did not believe it, and, amidst cries of " Make haste, my boy," he completed his task in a jiffy ; but the boat was gone ! A cry was heard, " Fling it to them ;" he did so ; and, favoured by the wind, the letter dropped safely into the boat. Not one of the crowd that hung over the side but was delighted at Pat's successful throw. A hearty cheer rose from the ship when the letter lighted upon the boat, and was answered by a counter cheer from the boat's crew as one of them held aloft the precious missive ; whilst poor Pat, with his rough hand, wiped away the tear which started involuntarily from his eye as he thought of the distant ones so anxious about his welfare.

In a few hours the stranger ship became a mere speck upon the horizon, and as the shades of evening drew near we were no longer able to discern it. Onward, and onward, still we went. Then we crossed the line, which many on board actually expected to find a palpable reality,—two or three even going so far as to ask for the glasses that they might see it more distinctly ! Then we got into the trade winds again, which bore us on our course with railway speed. Now we approached the Cape, and, rounding it, entered the Indian Ocean. The winds being still favourable, it was not long before we reached the welcome " half way house " between the Cape and Australia—the island of St. Paul ; and in another week every eye was straining for a sight of the " promised land flowing with milk and honey," which was to be our future home. During the past day or two the men had been engaged in scraping the masts, poop, &c., clearing the decks of all lumber, and shifting the horse-box and cooking apparatus, to make room

for the chain-cable, which from the depths below was now brought to light.

Nothing in the voyage could exceed the stirring interest which was excited by the announcement of "Land ho!" at the termination of our course. The lucky sailor who had given the information, in coming down the rigging, would have had grog enough for a week's consumption if he had accepted all the offers that were made to him; and although the desired point, or headland, could not yet be distinguished from the deck, a general hubbub was running through the cabins, and a display of caps, ribbons, collars, &c., all most eloquently proclaimed that we soon expected to be safely disembarked.

Soon the west cape of Kangaroo Island was made; the high land of Cape Jervis and Rapid Bay speedily came in sight; and now the ship glided smoothly over the shallow waters of St. Vincent's Gulf. On the left hand, as the ship sailed north, we saw the low and distant coast of Yorke's Peninsula, whilst, as we neared the right-hand or eastern shore of the gulf, the green and picturesque hills of the Mount Lofty ranges attracted and deserved our attention. The scene is beautiful at any season, but especially in the spring, about September, October, and November. After sailing up the Gulf, a pilot was seen making for the ship from Holdfast Bay, and presently came alongside, then on to the quarter-deck, and our captain was no longer commander. A few hours more and we were in the city of Adelaide, the capital of South Australia.

*(To be continued.)*

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#### LIFE OF COWPER—*(continued.)*

ON one occasion, when she happened to form part of the small circle of friends who frequently assembled in the evening at his house, observing that he was labouring under great dejection, she related to him the story of John Gilpin. Its effect on Cowper was magical. He told Lady Austen the next morning, that convulsions of laughter, caused by the recollection of the story, had kept him awake the greater part of the night, and that he had turned it into a ballad.

In the course of the year 1783 she was the means of engaging him in a work of much greater importance. Being a warm admirer of Milton, she often solicited her poet to try his powers in the composition of blank verse. After repeated entreaties, he promised that, if she would furnish the subject, he would comply with her request.

"Oh," she answered, "you can never be in want of a subject; you can write upon any.—Write upon this sofa."

Cowper obeyed her command; and this was the origin of "The Task."

This poem was finished in less than a year, and on its conclusion he commenced his translation of Homer.

In a letter to Mr. Hill he thus explains the motives which induced him to attempt an undertaking that had been so well performed by the masterly genius of Pope:—

"Knowing it to have been universally the opinion of the literati, ever since they have allowed themselves to consider the matter coolly, that a translation, properly so called, of Homer, is, notwithstanding what Pope has done, a desideratum in the English language, it struck me that an attempt to supply the deficiency would be an honourable one; and having made myself, in former years, somewhat critically a master of the

original, I was by this double consideration induced to make the attempt myself."

In another letter to the same gentleman, speaking of this work, he says:—

"I wish that all English readers had your unsophisticated, or rather unadulterated taste, and could relish simplicity like you. But I am well aware, that in this respect I am under a disadvantage, and that many, especially many ladies, missing many turns and prettinesses of expression that they have admired in Pope, will account my translation in those particulars defective. But I comfort myself with the thought, that in reality it is no defect; on the contrary, that the want of such embellishments as do not belong to the original will be one of its principal merits with persons indeed capable of relishing Homer. He is the best poet that ever lived, for many reasons, but for none more than for majestic plainness that distinguishes him from all others. As an accomplished person moves gracefully without thinking of it, in like manner the dignity of Homer seems to have cost him no labour. It was natural to him to say great things, and to say them well, and little ornaments were beneath his notice."

In "The Task" Cowper may be said to have introduced, or rather invented, a new species of blank verse, a medium and connecting link between the styles of Milton and Thomson. He has removed the gilded cloud which Pope had cast over Homer, and has retained much of the old poet's simplicity, though not enough of his fire. On the whole, his version, notwithstanding its numerous imperfections, is undoubtedly the more faithful portrait of the two.

The following extract from a letter written to his cousin, Mr. Hill, on the subject of some criticism made by Dr. Maty and others upon a specimen of his translation, is so illustrative of Cowper's feelings and character, that it cannot but be interesting to our readers:—

"The frown of a critic freezes my poetical powers, and discourages me to a degree that makes me ashamed of my own weakness. Yet I presently recover my confidence again. The half of what you so kindly say in your last would at any time restore my spirits; and being said by you is infallible. I am not ashamed to confess that, having commenced an author, I am most abundantly desirous to succeed as such. I have, what perhaps you little suspect me of in my nature, an infinite share of ambition. But with it, I have, at the same time, as you well know, an equal share of diffidence. To this combination of opposite qualities it has been owing that, till lately, I stole through life without undertaking anything, yet always wishing to distinguish myself.

"At last I ventured—ventured, too, in the only path that at so late a period was yet open to me: and am determined, if God has not determined otherwise, to work my way through the obscurity that has been so long my portion, into notice."

The period that elapsed between the publication of his first volume in 1781, and that of his Homer in 1791, seems to have been by far the happiest and most brilliant part of Cowper's existence. It was not only animated by the vigorous and successful exertions of his rare genius, which had so long lain dormant, but enlivened, in a very pleasing manner, by the correspondence and society of Lady Hesketh, who, on her return to England, renewed her early intimacy with the poet.

His letters to this lady, and to the other friends with whom he corresponded, are strikingly illustrative of his simple and affectionate character,

his mildness, philanthropy, and domestic temper; his pensiveness and devotion, his overstrained timidity, and his liveliness of imagination. In some there is much innocent playfulness and vivacity, and many abound in poetical sentiments and imagery.

In a letter to Lady Hesketh, on the receipt of one from her in which she promises to visit him at Weston, a village near Olney, whither he had removed, he writes:—

“I shall see you again—I shall hear your voice—we shall take walks together; I will show you my prospects, the hovel, the alcove, the Ouse, and its banks; everything that I have described. I anticipate the pleasure of those days not very far distant, and feel a part of it at this moment. \* \* \* \* \* I will not let you come till the end of May, or beginning of June, because before that time my greenhouse will not be ready to receive us, and it is the only pleasant room belonging to us. When the plants go out, we go in. I line it with mats, and spread the floor with mats, and there you shall sit with a bed of mignonette at your side, and a hedge of honey-suckles, roses, and jasmine; and I will make you a bouquet of myrtle every day. Sooner than the time I mention the country will not be in complete beauty. And I will tell you what you shall find at your first entrance.

“*Imprimis*, as soon as you have entered the vestibule, if you cast a look on either side of you, you shall see on the right hand a box of my making. It is the box in which I have lodged all my hares, and in which Puss” (one of his favourite hares) “lodges at present. But he, poor fellow, is worn out with age, and promises to die before you can see him. On the right hand stands a cupboard, the work of the same author. It was once a dove cage, but I transformed it. Opposite to you stands a table which I also made. On the left hand, on the further end of this superb vestibule, you will find the door of the parlour, into which I shall conduct you, and where I will introduce you to Mrs. Unwin, unless we should meet her before, and where we will be as happy as the day is long.”

In another letter, written some time afterwards to the same lady, he thus prettily describes his rural abode:—

“This house, since it has been occupied by us and our *meubles*, is as much superior to what it was when you saw it as you can imagine. The parlour is even elegant. When I say that the parlour is elegant, I do not mean to insinuate that the study is not so. It is neat, warm, and silent; and a much better study than I deserve, if I do not produce in it an incomparable translation of Homer. I think every day of those lines of Milton, and congratulate myself on having obtained, before I am quite superannuated, what he seems not to have hoped for sooner.

‘And may at last my weary age  
Find out the peaceful hermitage!’

For if this is not a hermitage, at least it is a much better thing; and you must always understand, that when poets talk of cottages, and hermitages, and things of that sort, they mean a house with six sashes in front, two comfortable parlours, a smart staircase, and three bedrooms of convenient dimensions; in short, exactly such a house as this.”

The following passage glows with all the ardour of mingled poetry and devotion:—

“Oh I could spend whole days and moonlight nights in feeding upon a lovely prospect! My eyes drink the rivers as they flow. If every human being upon earth could think for one quarter of an hour, as I have done

for many years, there might perhaps be many miserable men among them, but not an unawakened one could be found, from the arctic to the antarctic circle. \* \* \* \* \* Viewed without a reference to their Author, what is the earth, what are the planets, what is the sun itself but a bauble? Better for a man never to have seen them, or to see them with the eyes of a brute, stupid and unconscious of what he beholds, than not to be able to say, ‘The Maker of all these is my friend.’”

The next extract is a specimen of the easy and agreeable manner in which he would often pass

“From grave to gay, from lively to sevore.”

“ All the sounds that nature utters are delightful, at least in this country. I should not perhaps find the roaring of lions in Africa, or of bears in Russia, very pleasing; but I know no beast in England whose voice I do not account musical, save and except always the braying of an ass. The notes of all our birds and fowls please me without one exception. I should not indeed think of keeping a goose in a cage, that I might hang him up in the parlour for the sake of his melody; but a goose upon a common, or in a farmyard, is no bad performer. And as to insects, if the black beetle, and beetles of all hues, will keep out of my way, I have no objection to any of the rest; on the contrary, in whatever key they sing, from the gnat’s fine treble to the bass of the humble bee, I admire them all. Seriously, however, it strikes me as a very observable instance of Providential kindness to man, that such an exact accord has been contrived between his ear and the sounds with which, at least in a rural situation, it is almost every moment visited. All the world is sensible of the uncomfortable effect that certain sounds have upon the nerves, and consequently upon the spirits; and if a sinful world had been filled with such as would have curdled the blood, and made the sense of hearing a perpetual inconvenience, I do not know that we should have had a right to complain.”

The strange union of melancholy and comic humour, wit and sadness, that we not unfrequently meet with in Cowper’s writings, is thus in some degree accounted for by himself:—

“ I wonder,” he says, “ that a sportive thought should ever knock at the door of my intellects, and still more that it should gain admittance. It is as though a harlequin should intrude himself into the gloomy chamber where a corpse is lying in state. \* \* \* \* \* But the mind, long wearied with the sameness of a dull, dreary prospect, will gladly fix its eyes on anything that may make a little variety, though it were but a kitten playing with her tail.”

To divert himself in one of his gloomy fits, he wrote a rhyming letter to a friend, of which we quote the concluding paragraph as a specimen, for the amusement of our readers:—

“ I have heard before of a room, with a floor laid upon springs, and such like things, with so much art, in every part, that when you were in, you were forced to begin a minuet pace, with an air and a grace, swimming about, now in, now out, with a deal of state, in a figure of eight, without pipe or string, or any such thing; and now I have writ, in a rhyming fit, what will make you dance, and as you advance, will keep you still, though against your will, dancing away, alert and gay, till you come to an end of what I have penned; which that you may do, ere Madam and you are quite worn out with jiggling about, I take my leave; and here you receive a bow profound, down to the ground, from your humble me,

“W. C.”

But to resume his history. The translation of Homer was scarcely finished when a proposal was made to the indefatigable translator, to engage in a magnificent edition of Milton, for which he was to furnish a version of his Latin and Italian poetry, and a critical commentary upon his entire works.

In the year 1792 his kind friend Mrs. Unwin had a paralytic seizure, and the agony that this unhappy occurrence occasioned Cowper nearly unsettled his reason. Although the gradual recovery of the unfortunate patient, and the kind attention of a newly-acquired friend, Mr. Hayley, who happened to be staying with him at this time, restored him in a great measure to composure, yet his spirits seem never to have recovered the shock they had sustained, and the anxiety and apprehension he constantly felt for the beloved and affectionate companion of so many years, suspended his literary exertions, and aggravated the depression to which he had all his life been liable. Towards the end of this summer he paid a visit to Mr. Hayley, at Earlswood, in Sussex, but returned to Weston as melancholy and low-spirited as ever.

His constant and tender attention to Mrs. Unwin was one great cause of his now neglecting everything else. "I cannot," he says, in one of his letters, "sit with the pen in my hand and my books before me while she is, in effect, in solitude, silent and looking in the fire." Another cause was the oppressive dejection of mind that began again to overwhelm him. "It is in vain," he says, "that I have made several attempts to write since I came from Sussex; unless more comfortable days arrive than I have now the confidence to look for, there is an end to all writing with me. I have no spirits. When Rose came, I was obliged to prepare for his coming by a mighty dose of laudanum."

He seems in the course of the next year to have done little but revise his translation of Homer, of which he meditated an improved edition.

Mr. Hayley came to see him a second time at Weston. We give this affecting account of Cowper's situation, in the words of his future biographer:—

"He possessed completely at this period all the admirable faculties of his mind, and all the native tenderness of his heart; but there was something indescribable in his appearance, which led me to apprehend, that without some signal event in his favour, to reanimate his spirits, they would gradually sink into hopeless dejection. The state of his aged, infirm companion afforded additional ground for increasing solicitude. Her cheerful and beneficent spirit could scarcely resist her own accumulated maladies, so far as to preserve ability sufficient to watch over the tender health of him whom she had watched and guarded so long."

Soon afterwards, Lady Hesketh, moved by the most kind and generous compassion, took upon herself the charge of superintending this sad household. As Mr. Hayley truly observes, those only who have lived with the superannuated and melancholy, can properly appreciate the value of such magnanimous friendship. But, notwithstanding the care and attention he met with, poor Cowper grew worse and worse. He became utterly incapable of any exertion, either mental or bodily, and ceased to derive pleasure from the society and conversation of his friends. Neither a visit from Mr. Hayley, nor an order from the king for a pension of 300*l.* a-year, as a testimony of approbation of his poetical talents, could rouse him from this languid and melancholy state into which he had fallen; and at length his friends thought it necessary to remove him from Weston, to

Tuddenham in Norfolk, that he might be under the immediate superintendance of his relative, the Rev. Mr. Johnson.

The following touching lines addressed to the clergyman of his favourite village, after a long cessation of all correspondence, show that he lamented this forced separation from all his old haunts, and that his heart still turned with affectionate remembrance and fond regret to scenes endeared by many happy associations of bright days passed away, never more to return.

"I will forget, for a moment, that to whomsoever I may address myself, a letter from me can no otherwise be welcome than as a curiosity. To you, sir, I address this, urged by extreme penury of employment, and the desire I feel to learn something of what is doing, and has been done at Weston —my beloved Weston!—since I left it. No situation, at least when the weather is clear and bright, can be pleasanter than what we have here, which you will easily credit when I add that it imparts something a little resembling pleasure, even to me.—Gratify me with news of Weston!

\* \* \* \* \* Tell me if my poor birds are living. I never see the herbs I used to give them, without a recollection of them, and sometimes am ready to gather them, forgetting that I am not at home.—Pardon this intrusion."

In the summer of 1796 there were some faint glimmerings of returning vigour, and he again applied himself for some time to a revisal of his Homer.

In December Mrs. Unwin died, but Cowper was suffering under severe depression at the time, that even the death of his aged friend and companion could but little increase it. It is remarkable that he never afterwards mentioned her name.

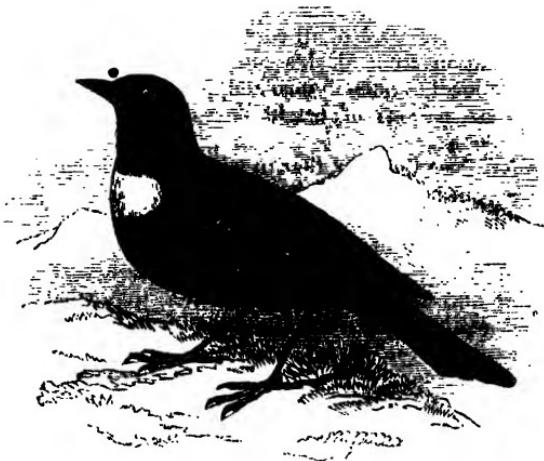
At intervals he still worked at the revisal of his Homer, which was at length finished in the year 1799; and he then translated some of Gay's fables into Latin verse, and made English translations of several Greek and Latin epigrams.

This languid exercise of his once vigorous powers was continued till the month of January 1800, when dropsical symptoms began to show themselves, which soon became very alarming. After a very rapid, but gradual decline, he expired without any appearance of suffering, on the 25th of April 1800.

We cannot conclude the memoirs of this amiable and very interesting man, without remarking how large a proportion of the mental suffering he endured was caused by the dark and gloomy opinions he had most unfortunately imbibed; opinions which must ever be as destructive to the tranquillity and peace of mind of the scrupulous and conscientious Christian, as they are contrary to the spirit and precepts of our sublime and holy religion.

Under any circumstances Cowper could not, with his peculiar physical constitution and formation of mind, have escaped occasional depression of spirits and fits of melancholy; but had he possessed more rational and less enthusiastic views of religion, he would have learned to direct and control the restless and over-excitable imagination, which was the bane of his existence, and have avoided those groundless doubts and fears, and that gloomy despondency, by which so many years of his blameless and innocent life were embittered.

## OUR NATIVE SONGSTERS.



RING OUZEL.

It is April, and wood and mead are green with the frequent showers, and soft pillow-like clouds lie on the surface of the blue sky. There is an air of freshness and youth in all nature, and, let us turn where we will from the dwellings of man, the chorus of birds shall greet ears. The wind sweeps gently over the wild flowers which crown the rocky crag, and the rivulets which run among the mountains are sparkling with diamonds, and melodious with the whisperings of the wind among the rushes, and with the trickling of its waters on the green mosses. The moorland spreads for miles away on the landscape, and wide hilly tracts are sprinkled with the furze, which is already golden, here and there, with the blossoms of spring. It is in such places that at this season the wild shy Ring Ouzel\* (*Turdus torquatus*) resorts to place its nest in some secluded spot. It has come from some warmer climate, and perchance since it was here last summer, it has seen the sandy soil of Africa, gay with its brilliant flowers, and passed over the sunny south, whose dales and hills are brighter than those of our island. But it would not linger there, but has come to the rocky moors of colder lands to rear its young. The ring ouzel, however, is not with us a common bird, though more frequent in our northern and western counties than elsewhere. It is well-known in some parts of Devonshire, is a bird of the Peak of Derbyshire, and in Scotland resorts to the Grampian Hills. We could wish that it were more generally distributed, for its song is said to be very sweet. The bird, which is often seen in Norway, Mr. Hewitson describes as frequenting many of the wooded rocks of that country, and enlivening the most bleak and desolate islands with its sweet song. He says that it shares with the redwing the name of nightingale, and often delighted him in his midnight rambles. In France it is called

\* The Ring Ouzel is eleven inches in length. The general plumage is black, with a broad crescent of white across the breast; the black feathers are generally margined with grey, most broadly on the wings; the beak is yellow at the base and black at the tip: the feet are blackish. The female is coloured like the male, but the hues are less pure.

the mountain blækbird, and it is in some of our counties known as the white-breasted blackbird. It has been thus by a poet contrasted with the blackbird, which it is much like in form and habits, only that it never chooses for its haunt the inclosed and inhabited districts.

“ From stone to stone the ouzel flits along,  
Startling the linnet from the hawthorn bough :  
White on the elm-tree, overshadowing deep  
The low-reed'd cottage white, the blackbird sits  
Cheerily hymning the awaken'd year.”

The ring ouzel places its nest near the stream, sometimes sheltered by a bank, or by some clump of large foliage; but often the wanderer over the moorland may see it scarcely hidden by the branches of the ling, or lying quite exposed to view, among the heather bells or roseate heath. The form and materials of this little structure are similar to those of the blackbird, and the eggs, too, resemble, both in size and colour, those of our early songster. Bechstein says that its voice is sweeter than that of our favourite, though some notes are hoarser and deeper; but few naturalists agree with him, and it is by others compared to that of the missel-thrush. The bird sings usually from the top of some crag or stone.

The food of the ring ouzel consists of snails, insects, hawthorn berries, and various fruits; and when it first returns to us in spring, it eats many ivy berries. During autumn it sometimes comes to gardens for the fruit, and about the end of October it is seen along our southern coasts in flocks of from twenty to thirty, ready for its departure. Mr. Yarrell thinks that these birds cross the Channel to France and Spain, and thence to Africa, where they pass the winter; while he considers that flocks from the eastern counties probably cross to Germany. It differs from other thrushes in this peculiarity, that it is as fat in the spring as in the autumn, while they, as well as most small birds, are very lean in the early season.

The male ring ouzel is a very spirited bird, and Mr. Thompson relates an anecdote which proves it to be ready to attack, even when there would seem no excuse for its pugnacity. This gentleman was walking in Crag-glen, near Belfast, with a pointer dog in advance, when two male ring ouzels rushed wildly screaming around the dog, at a few inches from his head. The dog seemed perplexed as to what he should do, and gave many an earnest and pleading look at his master, as if for advice in the difficulty. Finding this useless, he at length ran up to him; but the fearless birds, no way discouraged by the presence of the narrator and his two companions, followed, and flew so near that they might have struck them with their hands. “ At the beginning of the onset,” says this writer, “ a female bird appeared as if inciting the males forward, and remained so long as they were attaining the highest pitch of violence, and then, like another heroine, retired to another eminence to be ‘ spectatress of the fray.’ Had they been a pair of birds protecting their young, or assuming similar artifice to the lapwing in withdrawing attention from their nest,—in which the ring ouzel is said to be an adept,—the circumstance would perhaps, be unworthy of notice; but they were both male birds in adult plumage. The chase of the dog was continued a considerable way down the glen, and for fully fifteen or twenty minutes.”

But the deep secluded glen, where the stream rushes rapidly through the water-flowers and grasses, or dashes over the stones or against the rocks, in its course watering the green mosses which cover them into a richer greenness; the quiet nook of earth, where the smoke rarely rises against the

blue sky, is a home for another species of ouzel, one which is more frequent too, the Water Ouzel, or Dipper\* (*Cinclus aquaticus*).



WATER OUZEL.

Even in the dreary season, when the trees are bare of leaf or bud, when the ground is crisp with frost, and the streams are flowing beyond their bounds from the large quantity of snow which has fallen into them, even then the song of the water ouzel is strong, rapid, and sweet, often continuing for three or four minutes, and sounding through the clear air like a voice of spring from the depths of winter. In some of our northern counties, where these birds are frequent, it would be difficult to pursue the course of any stony rivulet for a mile or two, without seeing several of them flying in pairs a little way onward; then stopping by the side of the rivulet, and singing the sweet and varied song. It is among the earliest strains of spring; it is sung even at Christmas. It greets the wanderer among the voices of summer, is heard late in the autumn, and is not even silent when night draws the curtain of repose on almost all our singing birds. Those who have heard it very often have compared it to the song of the wren in its execution, though differing materially in not having the loud shrillness of the wren's strain; but possessing instead a certain subdued and warbling richness. Never is it sweeter than on a frosty morning of January.

Strange stories were formerly narrated of this dipper; telling how, in violation of all the laws of gravity, which ordain that things lighter than the water shall float to its surface, this bird has been enabled to sink beneath it and walk for a long space upon the ground. But this fable has had to yield to more accurate observation, and the lover of the marvellous must content himself now with knowing that the dipper can plunge suddenly into the depth, rise again at some distance from the spot, plunge in again right merrily, and sinking and emerging, again and again, seem no way ruffled in spirits or plumage by the performance. He generally commences his diving from a rock, slanting a little way from the surface,

\* The Dipper is about seven inches in length. The head and neck are umber-brown; the rest of the upper parts and lower belly nearly black; chin and throat white, merging into chestnut-brown on the breast—the beak and feet dark-brown.

either placed in the stream or at its side, and having first looked eagerly into the blue beneath him, he boldly seeks the depth, and pursues his prey where our eye cannot follow the movement. Even the half-fledged nestlings will, if alarmed, take to the water, as to their proper element, and learn to dive before they can learn to fly. Their food lies in the rivers and streams, and the larva of many an aquatic insect, which lies there awaiting till Time shall have gifted it with gauzy and golden wings to hover over the pool, forms a meal to the dipper. The caddis worm, which moves along at the bottom of the pool, in its case of woody fragments, and which, if left unharmed, will float over the stream as the light May-fly, supplies our bird with many a feast; and in his diving he seizes the tiny and beautiful stickleback, from the shoals which float in our lakes and streams, and which country people call barnstickles, because of their prickly spines; while the little minnows find no escape from his skilful wing and quick-seeing eye.

Mr. Macgillivray has told us by what means the dipper moves under the water, and says, that in reality it flies, extending its wing precisely as it would do were the air the element in which it was moving. Its body usually slants downwards, and the bird evidently has to use considerable exertion to keep itself at the bottom of the water. He remarks that in some instances, when he has clearly seen its motions there, it appeared to tumble about in a singular manner, its head inclining downwards, as if it were pecking at something, while both legs and wings were actively employed. It was at this time, apparently, in the act of seizing its food. He adds that its structure is not fitted for walking below the surface, for its short legs and long curved claws are most unsuited to the act of running, though well adapted for effecting a steady footing on the slippery stones which lie under or above the water. The dipper consumes a great quantity of fishes' spawn, particularly of that of the salmon, while the little shell-fish which lie in such numbers about the stems and foliage of water-plants become its prey, and are easily seized by it, whether floating near the surface or lying in winter torpidity. Neither cold nor frost deters this hardy bird from dipping in the stream, into which he will plunge in winter from a large piece of ice, and from this habit most probably it derives its name. The Germans call it *Wasserschwätzer*; the French, *Merle d'eau*; and the Italians, *Tordo del aqua*. It is a resident bird in our country, and is not unfrequent in the north and west of England, nor in Scotland, though it is seldom seen in the counties near London.

The plants which grow so luxuriantly in our waters, giving the spots where streams run a great appearance of richness and beauty, are used by this water-blackbird in making its nest. This is a very singular structure, often as large as a man's hat, more or less semicircular in form, with a firm sloping roof, made of moss, or water-plants, beneath which, as if under eaves, and completely hidden, is an aperture just large enough to admit the passage of the bird. The commodious and domed chamber within is lined with withered oak-leaves; and five beautiful eggs, of clear snowy white, are deposited there.

The water ouzel's nest is built early in the year, and the first family are ready for flight by the beginning of May. The nest is so well hidden, in some cases, that it could never be discovered did not the chirping of the nestlings betray its site, or the flight of the parent birds, as they pass to and from their younglings with food, mark the haunt. Often it is placed in some crevice of the rock, or bank, which overhangs the water, and

occasionally it is concealed among the stones at the side. A writer in the " Magazine of Natural History" remarks:—" Once I found a water ouzel's nest among some slender boughs, overhanging a stream and once beneath a waterfall, at a point where the rock retreated a little in the middle; the water falling in a sheet just over the nest, and forming, as it were, a crystal veil to it. Indeed, the eaves of the nest (as I call them) were always dripping wet, whereas the oak lining within remained always perfectly dry. The art with which this nest was accommodated to its situation was consummate." Mr. Thompson mentions a pair of water ouzels, which frequented a shade erected over a large mill-wheel of forty feet diameter. It was supposed that they had a nest there, though it could not be discovered; but he adds, that the appearance of these birds often caused surprise, as they emerged from the dark and gloomy abode, between the arms of this gigantic wheel, which was almost constantly in motion.

That beautiful bird, the Rose Ouzel \* (*Pastor roseus*), now and then appears in our island, though too rarely to deserve anything more than a passing notice among our singing birds. Few have heard its notes in our land. Mr. Broderip remarks of it:—" The song of this species appears to be peculiar. A wounded bird, shot from a flock by a sportsman near Meiningen, in Suabia, was soon healed and tamed by the kindness of M. von Wachter, the rector of Frickenhausen; and it began to sing. Bechstein relates, that its warbling consisted, at first, of only a few harsh sounds, pretty well connected; but this in time became more smooth and clear. A connoisseur who had heard the bird without seeing it, thought he was listening to a concert of two starlings, two goldfinches, and perhaps a siskin; and when he saw that it was a single bird that made this music, he could not conceive how it all came from the same throat. One of these birds is now in the aviary of the Zoological Society in the Regent's Park."

This bird is called the Pastor Ouzel, because, like the starling, it is often seen in company with sheep and cattle. It is the locust-bird of the east, and is much cherished there, as it destroys the locusts, so often a scourge to the vegetation of Oriental countries. The Arabs term it *Smurmer*, in imitation of its note. In India these birds are very numerous, darkening the air at the season when the bread-corn is ripening. In Dukhun, during the month of December, forty or fifty are said, by Colonel Sykes, to be killed at a shot. At this season they are very destructive to the crops, and commit scarcely less ravages than the locusts, which at other times they are so useful in destroying.

#### THE IGNIS-FATUUS ; OR WILL-O'-THE-WISP.

In marshy and boggy places a light is sometimes seen to hover over the ground by night, appearing from a distance like a taper gleaming from some cottage window. The light is not stationary, and should any incautious traveller approach it, it moves before him and thus leads him into bogs and marshes, where he is in danger of perishing.

This appearance is called Ignis-fatuus, or vain, or wild fire. It is also

\* The Rose Ouzel is eight inches and a half in length. The whole head and neck, the wings, and the tail, are black with a blue gloss; the whole middle part of the body, both above and below, rose-pink; beak and feet yellowish: the head is adorned with a fine falling crest.

called Will-o'-the-Wisp and Jack-o'-Lantern, by the country people, these being the names of a malignant spirit to whom the appearance was formerly attributed. Of late years the cause seems to have been well ascertained to be the lighting up of an inflammable gas produced by decaying animal and vegetable matter in bogs, marshes, and stagnant pools. It is found that when damp soils are drained and cultivated the Will-o'-the-Wisp disappears. Such has been the case with the extensive bogs and marshes which formerly occupied a large portion of the counties of Northampton, Huntingdon, Cambridge, Lincoln, Norfolk, and Suffolk.



In crossing the wild moors near the place where the counties of Northumberland and Cumberland join, the Will-o'-the-Wisp has often been seen. Two gentlemen were once riding over these moors, when they were surprised, about ten o' clock at night, by the sudden appearance of a light within fifteen yards of the road side. It was about the size of the hand, of an oval well-defined shape, and was more like a bright white cloud than a flame. It was seen in a very wet place where peat-moss had been dug out, leaving what are called "peat-pots," which soon fill with water and nourish various plants, which in their turn are changed into peat. The light was about three feet from the ground, and hovered for a time over the peat-pots, then moved to the distance of about fifty yards and suddenly went out.

Mr. J. Allies has described an ignis-fatuum which he saw on the night of the 31st December, 1839, in Worcestershire, in two meadows and a stubble field. He noticed it for about half-an-hour, at the distance of from one to two hundred yards. "Sometimes it was only like a flash in the pan on the ground; at other times it rose up several feet, and fell to the earth and became extinguished; and many times it proceeded horizontally from fifty to one hundred yards, with an undulating motion like the flight of the laughing woodpecker, and about as rapid; and once or twice it proceeded with considerable rapidity in a straight line upon or close to the ground. The light of these ignes fatui was very clear and strong, much

bluer than that of a candle, and very like that of an electric spark, and three or four of them looked larger and as bright as the star Sirius ; of course they look dim when seen in ground fogs, but there was not any fog on the night in question ; there was, however, a muddy closeness in the atmosphere, and at the same time a considerable breeze from the southwest. Those Will-o'-the-Wisps which shot horizontally, invariably proceeded before the wind towards the north-east."

A few years ago, Major Blessen, of Berlin, in order to determine the cause of the ignis-fatuus, made some experiments in a valley in the forest of Gubitz, in the Newmark, where this meteor was frequently seen. The valley cuts deeply into compact loam, and is marshy on its lower part. The water of the marsh contains iron, and is covered with a shining crust. During the day bubbles of air were seen rising from it, and at night, bluish purple flames were observed shooting from and playing over its surface. On visiting the spot by night, the flames retired as Major Blessen advanced, the motion of the air driving the burning gas before him. On remaining perfectly still, the flames returned, and he attempted to light a piece of paper by them ; but the current of air produced by his breath kept the flames at too great a distance. On turning away his head, however, and holding up a screen of cloth, he was able to set fire to a narrow strip of paper. He also succeeded in putting out the flame by driving it before him to a part of the ground where no gas was produced, then applying the flame of a torch to the surface whence the gas bubbles issued, a kind of explosion was heard over eight or nine square feet of the surface of the marsh ; a red light was seen, which diminished to a blue flame about three feet high. This continued to burn with the unsteady motion observed in the Will-o'-the-Wisp. As the morning approached all the flames became pale, and seemed to approach nearer and nearer to the earth, till they at last faded from the sight. Major Blessen thinks that when once the thin stream of inflammable air is set on fire, it continues to burn by day as well as by night, but the light is so pale that it cannot be seen by day. He also thinks it probable, that the fires which sometimes break out in forests are caused by ignes fatui.

The same observer has also made experiments on the ignis-fatuus in other places. At Malapane, in Upper Silesia, he passed several nights in a forest where this meteor was to be seen. He succeeded in extinguishing and inflaming the gas, but could not set fire to paper or thin shavings of wood by its means. In the Konski forests, in Poland, the flame appeared of a darker hue than usual, and on attempting to ignite paper and wood, they become covered with a viscous moisture. On another occasion, he succeeded in lighting up the ignis-fatuus by throwing fireworks from a distance into marshy ground. He visited by night the summit of the Porta Westphalia, near Minden ; the meteor was not visible, but on firing off a rocket a number of small red flames were observed below, which soon went out, but appeared again on firing another rocket.

It appears then, from these and other experiments made by scientific men, that the ignis-fatuus is frequently caused by inflammable gas, formed in stagnant pools by the decay of vegetable matter. The appearance of this meteor has been accounted for in various other ways, but none of them appear to be so satisfactory as the above.

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THE  
HOME FRIEND;

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AND SOLD BY ALL BOOKSELLERS.

[PRICE 1*d.*



STORY OF A BETROTHED PAIR IN HUMBLE LIFE—THE  
SURVIVOR'S GRIEF.

YES! there are real Mourners.—I have seen  
A fair, sad girl, mild, suffering and serene :  
Attention, through the day, her duties claimed,  
And to be useful, as resigned, she aimed ;  
Neatly she dressed, nor vainly seemed t' expect  
Pity for grief, or pardon for neglect ;  
But when her wearied parents sunk to sleep,  
She sought her place to meditate and weep ;  
Then to her mind was all the past displayed,  
That faithful memory brings to sorrow's aid ;  
For then she thought of one regretted youth,  
Her tender trust and his unquestion'd truth.  
In every place she wander'd where they'd been,  
And sadly sacred held the parting scene.  
Where last, for sea, he took his leave—that place  
With double interest would she nightly trace,

For long the courtship was, and he would say  
 Each time he sailed—"This once and then the day;"  
 Yet prudence tarried, but when last he went,  
 He drew from pitying love a full consent.

Happy he sailed, and great the care she took  
 That he should softly sleep, and smartly look ;  
 White was his better linen, and his check  
 Was made more trim than any on the deck ;  
 And every comfort men at sea can know,  
 Was hers to buy, to make, and to bestow ;  
 For he to Greenland sailed, and much she told  
 How he should guard against the climate's cold,  
 Yet saw not danger, dangers he'd withstand'd,  
 Nor could she trace the fever in his blood.  
 His messmates smiled at flushings in his cheek,  
 And he, too, smiled, but seldom would he speak ;  
 For now he found the danger, felt the pain,  
 With grievous symptoms he could not explain.

He called his friend and prefaced with a sigh  
 A lover's message—"Thomas, I must die ;  
 Would I could see my Sally, and could rest  
 My throbbing temples on her faithful breast ;  
 And gazing go ! if not, this trifle take,  
 And say, till death, I wore it for her sake.  
 Yes, I must die ! blow on, sweet breeze, blow on !  
 Give me one look before my life be gone ;  
 Oh, give me that ! and let me not despair—  
 One last fond look—and now repeat the prayer."

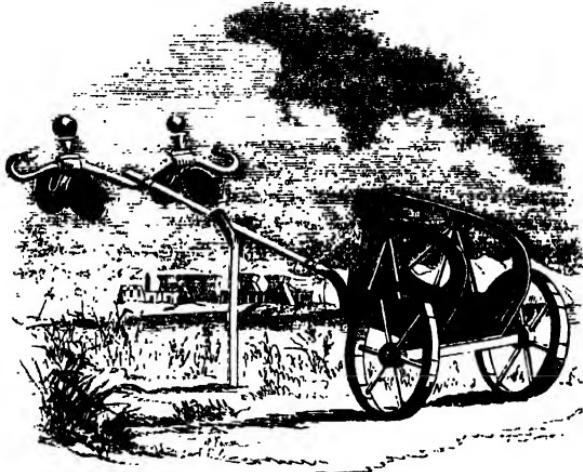
He had his wish, and more. I will not paint  
 The lovers' meeting. She beheld him faint—  
 With tender fears she took a nearer view,  
 Her terrors doubling as her hopes withdrew.  
 He tried to smile, and half succeeding, said,  
 "Yes, I must die!"—and hope for ever fled.

Still long she nursed him, tender thoughts meantime  
 Were interchanged, and hopes and views sublime.  
 To her he came to die, and every day  
 She took some portion of the dread away.  
 With him she prayed, to him his Bible read,  
 Soothed the faint heart, and held the aching head :  
 She came with smiles the hour of pain to cheer,  
 Apart she sighed, alone she shd the tear :  
 Then, as if breaking from a cloud, she gave  
 Fresh light, and gilt the prospect of the grave.

One day he lighter seemed, and they forgot  
 The case, the dread, the anguish of their lot ;  
 They spoke with cheerfulness, and seemed to think,  
 Yet said not so—"Perhaps he will not sink."  
 A sudden brightness in his look appeared,  
 A sudden vigour in his voice was heard.  
 She had been reading in the Book of Prayer,  
 And led him forth, and placed him in his chair,  
 Lively he seemed, and spoke of all he knew,  
 The friendly many, and the favourite few ;  
 Nor one that day did he to mind recal,  
 But she has treasured, and she loves them all ;  
 When in her way she meets them, they appear  
 Peculiar people—death has made them dear.

He named his friend, but then his hand she pressed  
And fondly whispered, "Thou must go to rest."  
"I go," he said ; but as he spoke she found  
His hand more cold, and fluttering was the sound ;  
Then gazed affrighted, but she caught a last,  
A dying look of love, and all was past. •

She placed a decent stone his grave above,  
Neatly engraved an offering of her love :  
For that she wrought, for that forsook her bed,  
Awake alike to duty and the dead.  
She would have grieved had they presumed to spare  
The least assistance—'twas her proper care.  
Here will she come, and on the grave will sit,  
Folding her arms, in long abstracted fit ;  
But if observers pass, will take her round  
And careless seem, for she would not be found ;  
Then go again, and then her hour employ,  
While visions please her, and while woes destroy.—CRABBE.

NINEVEH.—WAR (*continued*).

EGYPTIAN CHARIOT.

AMONG all the Oriental nations of antiquity, chariots were much employed in war. They form as prominent a feature in the sieges and battle scenes of Assyria as in those of Egypt. What number of war-cars the Assyrian monarch was able to bring into action we have no means of knowing with certainty ; the common proportion in the East seems to have been about one chariot to 100 horsemen. Xenophon describes the Assyrian as bringing 20,000 horse and 200 chariots, as his own proper subsidy against Cyrus. This ratio would give for Temen-bar's great army 1,200 chariots. Solomon in the height of his magnificence had 1,400 chariots, but only 12,000 horsemen, whom, with the former, he bestowed in certain "chariot cities." (1 Kings x. 26.) "All the chariots of Egypt," wherewith Pharaoh pursued Israel to the Red Sea, amounted to but 600 (Exod. xiv. 7). Jabin, the powerful king of northern Canaan, had 900 "chariots of iron,"

which are spoken of as a large number (Judg. iv. 3, 13) : Hadarezer the king of Zobah had 1,000 chariots (1 Chron. xviii. 4). These are the largest numbers mentioned in Scripture, with two exceptions (30,000 in 1 Sam. xiii. 5, and 32,000 in 1 Chron. xix. 7), in both of which cases there is probably some source of error, in the text or in the rendering.

The Assyrian chariot of the Nimroud period was a small light box, nearly square, open behind and at the top, with the posterior corner of each side rounded, and sometimes higher than the fore part. In general form and appearance it almost exactly agreed with that of Egypt, but was panelled, instead of open, at the sides. The rim was generally ornamented with a handsome moulding. The axle was affixed to the body at or very near the hinder margin, so as to throw the weight upon the horses, by which the severity of the jolting (which otherwise from the absence of springs would have been almost intolerable) was greatly mitigated. In the Egyptian car, where the same contrivance was adopted, the effect was further secured by making the bottom of interlaced thongs, a strong but very elastic flooring.

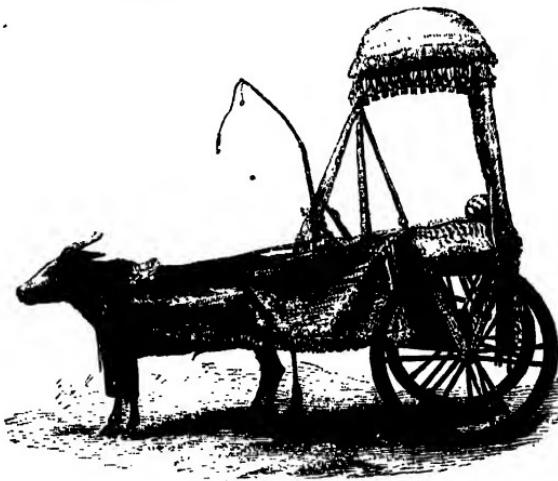
The wheels had the felloe (or circumference) very deep, made of from three to six pieces; whether it was bound with a tyre of metal is not shown, but it probably was, like that of the Greek and Trojan chariot. Its inner margin was strengthened by broad transverse bands, probably of metal. The spokes were six, slender, usually plain, inserted in sockets in a light nave, which was hollowed between them. No lynch-pin for keeping the wheels on the axle is represented, but a sort of button, or nut, seems to have answered the same purpose.

From the centre of the axle proceeded the pole, which, after passing beneath the body of the car, rose immediately in front of it with a salient curve, and passed on in a slanting upward line to the shoulders of the horses. The extremity appears to have been simple, generally, but sometimes to have curved upward in the form of a long neck, ending in the head of a bull or other animal.\* A broad crescentic ornament, set on a foot-stalk, was usually attached to this end of the pole; and between it and the front of the car passed a long elliptical apparatus, of which neither the use nor the material can be determined. It was elaborately painted or embroidered, and was generally divided transversely into three compartments, containing sacred emblems, such as the sun, moon, seven stars, and the horned-cap. Mr. Layard conjectures that it was a light wooden framework, covered with linen or silk, and intended as an ornament. Something analogous to this is found in the *eka*, a canopied carriage for a single horse or small ox, used in the Nizam, an example of which was in the Great Exhibition. The shafts are curved, arching outwards, and approaching at the horse's breast, where they are joined by another accessory pair of shafts proceeding from the upper part of the front of the car. To each of these latter is attached a piece of embroidered cloth, closely resembling in form this Assyrian ornament, just reaching to the lower shaft, where it hangs loose, its bottom being ornamented with gold and silver fringe.

The hinder part of the pole was elegantly carved, and as the great strain would necessarily fall upon the point where it curved abruptly upwards, it was here strengthened with hoops, probably of metal; a rod or cord also passed from the front of the chariot-rim to this part of the pole.

\* These parts are usually concealed by the horses, and when they are sculptured, the lack of perspective and the confusion of the surrounding parts render the structure intricate and uncertain.

At one side of the car, near the front, was a socket, in which was sometimes set, perpendicularly, the staff of the standard, presently to be described ; and at one of the hinder corners there was another socket frequently carved into a human face, from which projected, diagonally, a spear, or, occasionally, a pole carved in imitation of a spear. Two large quivers were hung across each other at each side, which will be more particularly described hereafter.



EKA OF NIZAM.

Two persons ordinarily rode in each chariot, of whom one was the warrior, the other the charioteer, just as Homer describes.\* These were manifestly of equal rank. Sometimes a third rider was present, who in that case generally maintained his position, by holding a loop affixed to the front rim, because, from the narrowness of the chariot, and from his being behind, he was liable to be thrown out.

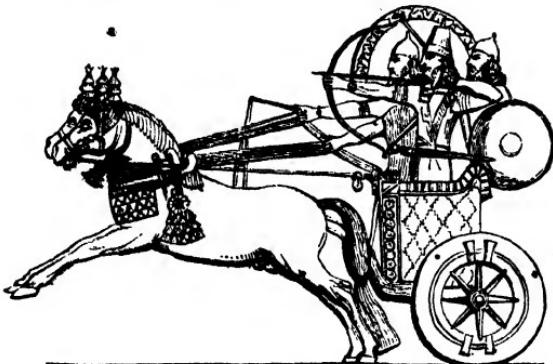
The ancient Hindoo chariot had posts standing up from the body of the car, which the riders laid hold of, when the unsteadiness of its motion caused danger of their falling out.

The smallness and lightness of the Assyrian chariot were such that one man carried it on his shoulders, while another bore up the pole.

In the later Assyrian era the form and appearance of the chariot had greatly altered. It was larger, and was placed on loftier wheels ; it was perfectly parallel sided, deeper than wide, and the posterior upper corner of each side carried a curious angular projection, difficult to explain, which subsequently became rounded off. The sides or panels were carved in some regular pattern ; the crossed quivers and bow-cases were removed, and a quiver was attached perpendicularly, along each front angle ; sometimes, however, it seems to have been dispensed with altogether. The wheels had eight spokes. No trace of the elliptical ornament remained over the pole, but a cord, probably of twisted thongs, and gilded (being painted red in the

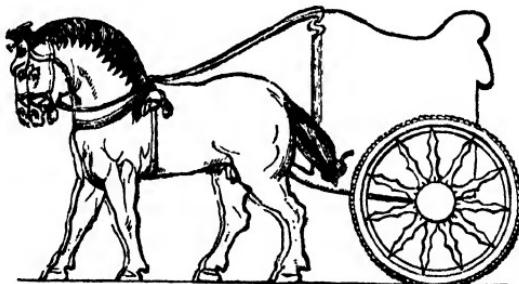
\* The Hebrew chariot carried double (1 Kings xxii. 34) ; the Egyptian, like the Assyrian, bore generally two, sometimes three. The chariots of the early Britons carried a warrior and a driver, of whom the latter took the higher rank. It was open before, and thus the warrior could run along the pole, and smite his enemies here and there with great effect.

sculptures), passed from the upper part of the front of the car to the extremity of the pole. This cord could be tightened by a loop being taken up in it, and drawn tightly through a ring.



KHORSABAD CHARIOT.

There is a ~~wide~~ difference between the form of the car, its pole, &c., on the Khorsabad sculptures and on those of Kouyunjik, though only one generation had intervened. It is interesting to observe how exactly in this form, especially the Kouyunjik modification, it agrees with the chariots of the Persepolitan bas-reliefs, because we thus trace the transfer of Assyrian customs to their Persian successors.



PERSEPOLITAN CHARIOT.

The chariot never seems to have been used as an actual weapon of war, but only as a means of conveyance, like those of the Greeks and Trojans, and no scythes are ever represented on the axle.

In the earlier era three horses were always attached to each car, two of which drew by means of a yoke transversely set on the end of a pole. The external horse is supposed to have been supernumerary, and to have been intended as a reserve. But in a chariot represented in a Khorsabad bas-relief, borne by attendants, the yoke certainly appears intended to receive four horses. Yet in the battle scenes of this period, the number represented is, almost invariably, two, though the reins in each hand of the charioteer are always *three*, a curious anomaly!

We incline to think that the ancient chariot was drawn by the yoke alone, just as a bullock-cart is with us. Nothing of the nature of traces is visible in sculptures of either Assyria, Egypt, or Persia.

It is uncertain what the material of the chariot was. From the frequent

mention of the circumstance that the chariots with which the Hebrews were familiar were "burned in the fire" (Josh. xvi. 6, 9; 2 Kings xxiii. 11; Ps. xlvi. 9), we may infer that they were generally made of wood; especially as the same thing is predicated of those of Assyria in particular, "I will burn her chariots in the smoke" (Nah. ii. xiii). • The "iron chariots," which the Canaanites possessed (Josh. xvii. 16; Judg. i. 19; iv. 3, 13), and which were looked upon with so much terror, were probably adorned and strengthened with that metal in an unusual manner.

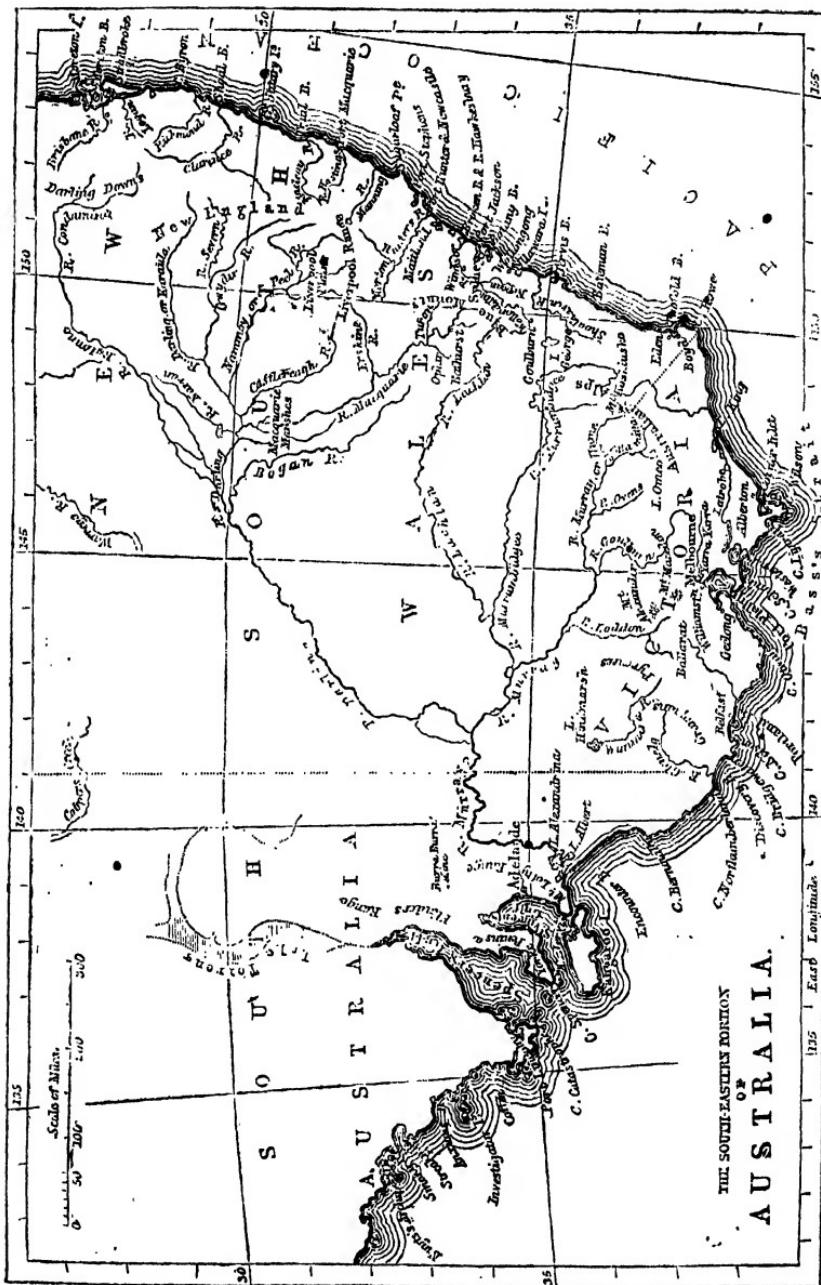
The Assyrian chariot was not furnished with a seat in any period of which we have monumental records, the king himself invariably standing in his car, even when luxury had prompted the invention of the carriage-parasol with its depending veil. The Egyptian chariot was equally unprovided; and so, as it appears, was the Hebrew, for the wounded king Jehoram "sunk down in his chariot" (2 Kings ix. 24), and his predecessor Ahab, in similar circumstances, "was stayed up." (1 Kings xxii. 35.)

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#### A VISIT TO AUSTRALIA AND ITS GOLD REGIONS (*continued*).

#### THE COLONY OF SOUTH AUSTRALIA—ITS EARLY HISTORY AND PRESENT CONDITION.

It was in the year 1805 that Captain Flinders first explored that portion of the Australian continent which is now known as the Colony of South Australia. He landed first on Kangaroo Island, which acts as a natural breakwater to the Gulf of St. Vincent. This island, which received its name from the large number of kangaroos that were found upon it, is about 100 miles long, and at the widest part about 25 miles broad. It is very hilly, and the general appearance is uninviting. There are in the island extensive lakes, the water of which is salter than sea-water; and in the summer season the evaporation causes a deposit of salt upon the banks, which is collected and sold in Adelaide. It was upon this island that, in the year 1836, the first colonists landed; but they soon became dissatisfied with their locality, and sailed over to the mainland at Rapid Bay, near Cape Jervis, and there founded a settlement. They at once commenced the cultivation of the land, and were so enraptured with the beautiful appearance of the country that, overlooking many natural disadvantages, they determined upon establishing there the future capital of the colony. It was not long, however, before the more sagacious amongst them began to perceive that, however little those disadvantages might be felt at first, they would prove seriously detrimental when the colonists became more numerous. They, therefore, again started off, and, sailing towards some hills seen to the north, at a distance of about forty miles, they landed at Holdfast Bay, and discovered the district now called the Adelaide Plains. Here a level grassy country, intersected by picturesque bands of trees, and backed by a chain of hills of moderate height, presented to them not only a beautiful tract, but a wide extent of excellent land. After exploring these plains for some time, they came upon an extensive chain of ponds in the bed of a watercourse, which subsequently received the name of the River Torrens. In the winter it is a large and rapid stream, but in the summer it is much diminished. As soon as this river was discovered, the surveyors commenced marking out the future city of Adelaide, the larger portion of which it was decided should be on the south side of the river. The surveyors of Adelaide certainly appear to have discharged their duty



with much judgment ; the streets (laid out at right angles) are from 60 to 120 feet in width ; and, besides twenty-two principal streets of great breadth, there were several squares and terraces, so designed as to ensure ample space, and a free circulation of air in the heart of the city.

The plans were scarcely completed ere a mania commenced for the acquisition of town land. Ships had arrived with monied people, and at every auction a scramble ensued for the best lots. Every purchaser endeavoured by all means in his power to render that part which he possessed the busiest and most bustling portion of the town. Houses, and rows of huts of every material and form, were run up with the greatest speed. Bricklayers, masons, carpenters, and all who could render themselves in the slightest degree serviceable in building operations, were sought after with avidity, and received enormous wages. As fresh arrivals took place, and the price of houses and land increased, every one became infected with the desire to take advantage of the opportunity of rapidly becoming rich. Flocks of sheep, and herds of cattle, from Van Diemen's land, supplied the colonists with fresh meat; for the attention of all was so absorbed by building speculations, that no one as yet dreamt of the necessity of going into "the bush," or of cultivating land. Each purchaser speedily sold his lot at an enormous premium; but he repented of his precipitation on seeing it immediately resold at double the price he had received for it. Again he invested his capital in a fresh purchase; and then he wrote home to his friends in the old country acquainting them with his good fortune, and advising them to come out and bring "money in their purses." Artisans also sent letters to the poor relatives they had left behind, telling them that they could earn enough in two days to live like gentlemen all the rest of the week; and these communications producing their effect, gradually brought in hundreds of immigrants, both capitalists and labourers, all anxious to secure their share of such unexampled prosperity. Merchants also vied with each other in sending cargoes of goods to so excellent a market; and even the adventurous bushmen of New South Wales, hearing of the extraordinary price which sheep and cattle were commanding in the new colony, started overland, and, overcoming all the difficulties of six hundred miles of unexplored country, appeared with their flocks and herds in the streets of Adelaide, to the astonishment of the inhabitants. Publicans made a fortune in three years. Gentlemen, elated with the increasing nominal value of their property, kept open house to all their friends. Provisions rose to an enormous price. Cows were sold at 40*l.*; bullocks at 100*l.* per pair; sheep 3*l.* to 4*l.* per head; meat was 1*s.* 6*d.* to 2*s.* per lb.; bread 2*s.* 6*d.* the 4lb. loaf; flour 100*l.* per ton; and land rose from 3*l.* or 4*l.* to 1,000*l.* and 2,000*l.* per acre. All classes were pleased and satisfied. The capitalists rejoiced at the enormous price which their land and houses brought them in a community where all were anxious to purchase, and none to sell. Artisans, notwithstanding the high price of food, were satisfied, as the amount of their wages increased in proportion; merchants and tradesmen were overjoyed at their enormous profits; and the whole community were in ecstasy at the progress their new colony was making.

Soon, however, came a change. Had there been one unexcited observer, possessed of good common sense, and having no personal interest in the affairs of the colony, he might have seen that, as there was no land cultivated, and every variety of provision had to be imported and paid for in hard cash, the money brought in by the capitalists was gradually flowing

away, without the remotest chance of returning. As long as the capitalists were believed to be really rich, their credit was proportionately great. Adelaide agents were glad to supply goods to any extent on credit to their customers, and from the scarcity of cash, took credit also from the home merchants in their turn. About the same time the New Zealand Project was publicly set forth in London, and monied men who were disposed to emigrate directed their course to that colony. This consequently stopped those supplies of money to Adelaide which had hitherto sustained the mania.

The agents were soon compelled to restrict their credits and to press their customers for payment, and the latter were under the necessity of selling their property in order to meet their engagements; but sales on credit being useless for the purpose in view, few buyers were to be found, and prices dropped. The fall of prices, and their tendency to get still lower, induced holders to endeavour to realize before they sustained still further loss. Then came a glut of property upon the markets; and the bitter fruits of the land and building mania which had taken possession of the people of Adelaide soon became too apparent. Ruin stared every one in the face; all credit was gone; those who had been living luxuriously either absconded, or declared themselves hopelessly insolvent. The agents, not being able to realize their claims, also shared in the general wreck. The home merchants stopped the supplies, and scarcity and starvation appeared inevitable. To add to the evil, shipload after shipload of emigrant labourers arrived, who, in place of high wages and prosperity, found no employment. These unfortunate men applied to the Governor, who was compelled, in order to preserve them from absolute famine, to employ the more destitute on public works. Even those who had landed with a small supply of money found it speedily exhausted, and themselves left without the means of removal, and thus swelled the list of applicants for assistance. The colonial government consequently exhausted its funds, and was compelled to borrow from the sister colony; and, with a government in debt and embarrassed, the upper and middle classes nearly all bankrupt, and the labouring classes in a state of absolute starvation, the colony sunk into a gulf of apparently hopeless ruin.

Out of this building mania, however, a branch movement of a similar character had arisen, which, although adding, for the time, to the evil, contained within itself the germ of a future revival and prosperity. When the best lots of town land in Adelaide were all purchased, and the prices became such that few would venture to speculate further, many turned their attention to the most eligible among the country sections, and, cutting them up into acre, and half and quarter-acre lots, laid them out as villages, realizing large prices as compared with the original cost, although small as regards the comparison with the land in Adelaide. A multitude of little suburban hamlets thus sprang into existence, many of which were named after the well-remembered suburbs of Hampstead, Islington, Kensington, &c., or bore the names of their founders, as Walkerville, or Smith's-town. This phase of the mania, however, had the effect of drawing many people from the city, into the country, who, living in their "villas," began to enclose and cultivate their acres. These soon found that, from the natural excellence of the land, all kinds of corn and vegetable produce grew luxuriantly; and still more, that the price of all these products was such as to yield them a handsome return; and thus that which was originally done for mere ornament to the cottages, was pursued for

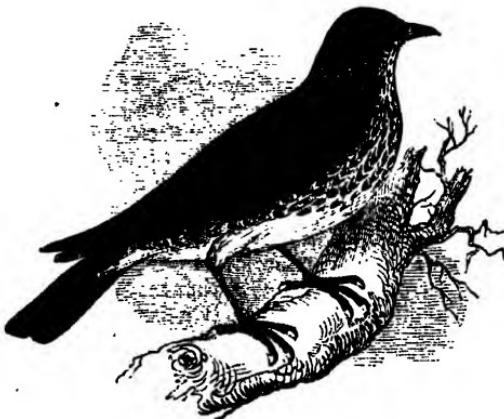
profit. The land in the interior was then bought, fenced in, and cultivated; and people began to flock into the "bush." And although the discovery of the proper course of proceeding was made too late to save the colony from the disastrous effects which we have spoken of, it was still in time to prevent it from being entirely and irretrievably lost. The real value and fertility of the land being demonstrated, and the want of employment for the myriads of labourers who had been drawn to the colony having reduced the rate of wages to the lowest possible sum, a more enduring prosperity dawned upon the colonists while in the very depths of despair. Those who had any capital remaining went at once into the country; the quantity of land put under crop rapidly increased; the anxiety of labourers of every class to obtain some better means of living than the pittance derived from making roads at the government expense, led them to flock into the bush in greater numbers than could be employed. The crops grew with such richness that the people were delighted, and wondered how they could so long have overlooked so abundant a source of wealth. Fences sprang up along the roads; houses and cottages appeared in every direction; sheep and cattle, fallen to their legitimate price, grazed in the rich meadows, and the flail of the thresher began to be heard. By the end of 1841, provisions were again becoming abundant; a plenteous harvest ensued; and it appeared by the government returns for 1843, that corn and flour to the value of nearly 10,000*l.* was exported, besides leaving sufficient at home to supply the whole of the people with cheap food. Thus, in a period of less than seven years, a colony had been established under the most favourable circumstances; had been brought to the very verge of ruin by an absurd mania; and then had arisen again, like a phoenix from its ashes, from distress and misery unparalleled in colonial history, to become once more a successful and prosperous community.

Let us now direct our attention to the present state of the colony. But a few years ago and the site of the present port was a mere swamp, covered with mangrove trees and ponds of stagnant salt water. It is now a business-like place, and, for the short time it has been in existence, has made wonderful progress. The Government has erected substantial wharves and other buildings, and made it a convenient landing-place for goods and passengers. The ships lie as close to the shore as in an English dock, and are safe from injury in even the roughest weather. From the great increase of shipping consequent upon the discovery of the mineral riches of the colony, the present port is far too small; and arrangements have been made to remove the site nearer to the sea, and to construct a railroad from the port to the city. There are some fine hotels at the port and some good houses, although the greater part of them are wooden buildings of three or four rooms. But numerous structures of a more substantial character are in course of erection. Every hour, omnibuses run from the port to the city, a distance of eight miles. The road is perfectly level, and a portion of it (perhaps at the present moment the whole) is macadamized. The bustle along this great highway generally excites surprise amongst new comers. Most of them imagine that everything they see will present a strange, if not an uncouth appearance. To their great delight, however, almost all they see puts them in mind of the old country. Houses and shops, shipping, vehicles, men, women and children, all present precisely the same appearance as if they had journeyed but twelve miles instead of twelve thousand from their former home. As Mr. Wilkinson (the author of that excellent work, "South Australia and its Resources")

says, "Familiar-looking inns and shops, and genuine English shopmen, take one quite by surprise. The cheese, butter, and 'bakers' bread,' the joints of meat and bundles of vegetables exposed for sale, and in fact the *tout ensemble*, is English and comfortable."

Leaving the port behind, you pass over the level ground, smooth as a bowling-green, on which the railway is to be constructed; neat whitewashed cottages and farm-houses stand by the road-side, close to well-filled stack-yards. The earth is red, and looks too heavy for growing good corn; but it is better than its appearance betokens, and frequently yields an average of thirty bushels per acre. Passing through two villages you arrive at the Frome Bridge, and then the road runs through the Park Lands which surround the city, and which have been wisely preserved for the recreation of the inhabitants. These Park Lands are very pleasant, and have much the appearance of an English domain; they are adorned with large native trees, principally high gum-trees, growing in clumps; and the river runs through the grounds for some distance, with handsome foliage over-hanging it.

OUR NATIVE SONGSTERS.  
THE FIELDFARE AND REDWING.



FIELDFARE.

FAR more common is another migratory visitant of the thrush tribe—the Fieldfare\* (*Turdus pilaris*)—which comes to our island with the redwing for the winter, and reaches us just as our other migratory birds are taking their departure. The Rev. W. T. Bree observes, that he had heard an old sportsman say, that the same wind which brought the swallows, took the woodcocks away; and adds, "I have heard an intelligent countryman remark, alluding to the fieldfares and redwings in the spring, that there would be no warm weather till those birds had done chattering." Sometimes the common thrushes are observed to congregate with the small

\* The Fieldfare is ten inches in length. The upper parts in general are ash-grey, but the back and wings are umber-brown, and the tail is blackish: chin and throat fine yellow; breast reddish-brown; belly white; the throat and breast and the crown of the head, spotted with black: the beak and feet brown.

parties of fieldfares, which are in company together. Clare thus notices these birds :—

"The hedger's toils oft scare the doves that browze  
The chocolate berries on the ivy boughs ;  
Or flocking fieldfares, speckled like the thrush,  
Picking the berry from the hawthorn bush,  
That come and go on winter's chilling wing,  
And seem to have no sympathy with spring."

In some years, when these birds have arrived here by the end of September, the snow having lain long on the ground, they have cleared off all the ivy-berries in the neighbourhood, eating them unripened, and before they were as large as a pea. In milder seasons, the fieldfares spread themselves in flocks over the fallow-lands and pastures, hunting for the slugs and worms, which they seem to prefer to the berries, to which they resort when these animals cannot be procured. These thrushes remain with us usually till about the coming back of the swallow ; but they have been seen and heard sometimes as late as the middle of May. The nest has been found, though very rarely, both in England and Scotland. Their summer quarters are the countries at the north of Europe ; and they stay throughout the year in Poland, Prussia, and Austria. They may be heard with the redwings, previously to their departure, all chirping together ; but little harmony exists in this noisy concert.

The call-note of the fieldfare is unmusical, but its song is soft and melodious, though Bechstein thinks otherwise ; for he says it is a harsh and disagreeable warble. Many persons, however, like its strains when in confinement, and it is easily tamed. A still sweeter song belongs to the Redwing\* (*Turdus iliacus*) ; and it is heard sometimes in this country, before



REDWING.

the bird takes its spring departure. This bird is called the nightingale of Norway ; but its song, apparently, does not acquire perfection in this land.

\* The Redwing is less than nine inches in length. The whole upper parts are dark brown ; while under parts impure white, tinged with brown on the breast and flanks, and studded with chains of triangular blackish spots : the sides of the body and the inner surfaces of the wings are of a fine pale red ; a streak of pale brown passes over each eye : beak black ; feet pale brown.

Here it hardly sings it out, but runs over its modulations in low and gentle tones, as if afraid of pouring forth all its joys, or as if practising against the season of song, though the voice seems no better in May than it was in January. Mr. Blyth, writing of this bird in the month of March, says — “A day or two ago, I think I heard one in its full perfection. It did not see me, and it was alone, away from its companions, and piping forth with the utmost glee and spirit. Its notes were low and soft, some of them very sweet; and it now and then introduced a few that were loud and pleasing; but altogether its song is by no means equal to that of the mavis. The redwing, in short, is not a bird worth confining for the mere sake of its music.”

The smaller birds, in general, acquire each season their song by degrees, though this is less the case with the thrush tribe than with any other; as the missel-thrush and mavis sing as loudly and fully in November as in March; and the flute-like tones of the blackbird are as melodious amid the cold winds of early spring, as in the warm and pleasant month of April. Young birds of the singing species may, however, be heard practising their song even before leaving the nest. This practising is by bird fanciers called recording, apparently from the musical instrument formerly in use in England, termed a recorder, which is thought to have been a kind of flute, and may have been used to teach young birds to form notes. “I have known,” says the Hon. Daines Barrington, “instances of birds beginning to record when they were not a month old. This first essay does not seem to have the least rudiments of the future song; but, as the bird grows older and stronger, one may begin to perceive what the nestling is aiming at. Whilst the scholar is thus endeavouring to form his song, when he is once sure of a passage, he commonly raises his tone, which he drops again when he is not equal to what he is attempting; just as a singer raises his voice, when he not only recollects certain parts of a tune with precision, but knows that he can execute them. What the nestling is not thus thoroughly master of, he hurries over, lowering his tone, as if he did not wish to be heard, and could not yet satisfy himself. A young bird commonly continues to record for ten or eleven months, when he is able to execute every part of his song, which afterwards continues fixed, and is scarcely ever altered. When the bird is thus become perfect in his lesson, he is said to sing his song round, or in all its varieties of passages, which he connects together, and executes without a pause.”

A similar practice may be observed in autumn, among older birds. During the season of moulting, the woods are silent, for no song is uttered by the birds which sang so sweetly on those boughs in spring. Several of our birds, however, recommence singing when this moult is over. Thus, the robin’s autumnal note is one of the first tones to remind us that winter is on its way to us; and the wren and the goldfinch have a strain for the fading year. At this time, before these birds arrive at their full song, they may be heard warbling their low prelude, as a singer might do to prepare her voice for louder strains of music. The chaffinch will sometimes practise thus for several weeks before attaining its former perfection; and the nightingale thus tries for a long time to model the notes of its rich strain before it can produce the full degree of compass and brilliance. This practising does not seem to arise from any forgetfulness of the song, but from a want of flexibility in the organs of the voice, owing to long disuse.

But we must return to the redwing, which, besides its song, has a very

loud call-note, seeming as if it uttered a cry of "tan, tan, kan, kan," a sound which, in woods where foxes abound, is said to serve as a notice of its presence to that animal, when Reynard will follow it a long distance through the wood. The food of this bird usually consists of snails, slugs, worms, and soft insects. When these cannot be procured, it feeds on the ivy and other berries; but it is probable that many of the redwings perish in winter, not from the cold, but from hunger. When an early gleam of sunshine awakes the insect world before their time, this bird seems truly to hail with delight the season of food and brightness.

"Flowers peep, trees bud, boughs tremble, rivers run,  
The redwing saith it is a glorious morn."

Our bird is much like the common thrush. It chiefly frequents parks and shrubberies, and has been seen and heard as late as the month of May, in Surrey, Essex, and Yorkshire; while White of Selborne heard it in his neighbourhood as late as June, in a season which had been unusually backward and cold. The redwing has been known to make its nest occasionally in Middlesex and Surrey. But these were evidently exceptions to the general rule, and the bird usually wings its way to northern climates to rear its young, and to sing there the "sweet wild song," which it is described as singing in Norway.



GOLDEN ORIOLE.

The soft, flute-like notes of the Golden Oriole\* (*Oriolus galbula*) are now and then heard in our orchards, for this bird is an occasional visitor to Britain. With the exception of the Bohemian Wax-wing, it is the most beautiful of all the birds which find their way into this country, and it is so richly coloured, that one would believe it to be a native of those tropical lands where birds and insects and flowers are so much more gorgeous than with us. It is not uncommon in Germany, Holland, and France, and is very numerous in Spain, Provence, and Italy, dwelling in secluded

\* The Golden Oriole is nine inches and a half in length. The general plumage brilliant yellow, with the wings and tail black, and a black stripe on each side of the face; beak orange-brown; feet lead colour. The female is greenish-yellow, streaked with dark brown.

groves, and in the borders of forests, during the summer months, and departing in the autumn into Africa and the warmer regions of Asia.

A very sweet song is that of the golden oriole ; and it has been likened to the sounding of various words by those who listened to it. The French call the bird *Père Loriot*, and some say that its song clearly articulates the words Oriolet or Loriot. French ornithologists go further still, and detect in its notes the words *Compère Loriot* (Gossip Loriot) ; others say, that it cries "*Louisat bonnes merises*" (Louisat good black cherries) ; and others have arrived at the very climax of fancy, and detect very decidedly, "*C'est le compère Loriot qui mange les cérises, et laisse le noyau.*" (It is the gossip Loriot who eats the cherries, and leaves the kernel.) The notes "Yo, yo, yo," are certainly repeated in its song, and Bechstein says, that the call-note of the bird is well expressed by the words "Ye puhlo." It can imitate tones not natural to it. Thus, the last-named writer mentions two golden orioles reared from the nest, one of which, in addition to its own song, whistled a minuet, while the other imitated a flourish of trumpets. It is a very distrustful bird, and not easily reared in captivity, rarely living more than three or four months in a cage.

The food of the oriole consists of insects and berries, and it makes some havoc among cherries, which seem to be its favourite fruit. Its singular nest is generally hung in a fork of a bough, being usually attached firmly to both branches. It contains four or five white eggs, tinged with purple. The French have a saying that it is an ill omen to find an oriole's nest.

These birds display great attachment to their young, and great courage in defending them. Montbeillard says, that the parent birds will dart courageously at those who carry off their nestlings, and that the persevering mother has been known, when caged with her nest, to continue hatching in confinement, and to die while sitting on her eggs.

The epicures of the Greek isles consider the flesh of the oriole a great delicacy, and this is with other small birds often exposed there for sale.

#### HOME REFORM (*continued*).

NEARLY allied to ventilation, is the importance of a sufficiency of light in every apartment inhabited by human beings. It is a medical opinion that "the amount of disease in light rooms, as compared with dark ones, is vastly less." The rays of the sun are especially beneficial, and ought not to be obstructed, but welcomed as harbingers of health and joy. To admit as much light as practicable, let the windows be kept clean, and if blinds and curtains are deemed necessary, let them be fixed so as to obstruct as little light as possible. In the rooms of vast numbers, there is a miserable deficiency of light, and a gloomy state of feeling is the necessary consequence, even if the physical and moral senses are not, as in most cases it is to be feared they are, seriously injured. Happily the recent repeal of the duty on windows has removed one powerful inducement to exclude the light of heaven from our dwellings, whilst the sanitary regulations of the Public Health Act, in regard to the occupation of cellar apartments, will, when duly enforced, greatly diminish the number of inhabited rooms from which light and air are excluded.

The importance of pure air, the necessity of adequate ventilation, and of a sufficiency of light, having been dwelt upon, the next essential requisite to a healthy and comfortable home which we have now to consider is

cleanliness ; the want of this renders many a dwelling little better than a pigsty.

Whence arises the difference between two neighbouring cottages ? In accommodation and in structural arrangements they may be precisely similar, even the same roof may span them both. A glance at the entrance door, or at the window, will reveal the secret, and proclaim that the presiding spirit in the one is that of order and cleanliness, whilst in the other disorder and dirt have the sway.

If you doubt whether the sunken and dirty threshold, the broken door, or the patched and dingy window, fairly indicate the internal aspect of yonder house, you have only to enter and to be satisfied that the good and practically important injunction, "a place for everything, and everything in its place," if ever taught to its inmates, has had no more effect on them than the kindred precept, "cleanliness is next to godliness." Alas, alas ! in how many cases does the health, the happiness, the character of the working man gradually sink, from utter neglect of his own interest and wellbeing ! Whence arises that close and noxious smell which contaminates the atmosphere of so many a dwelling, even where there is no deficiency in the means of ventilation, but from the constant accumulation of filth in the corners and crevices of the house ? to say nothing of the more obvious sources of impurity which present themselves in every over-crowded abode.

Is it in such a dwelling that we look for the faithful discharge of relative duties, for parents training up their children in the way they should go, and cultivating those dispositions and feelings which conduce no less to their happiness here than they are in harmony with the great end and object of life—the preparation for a state of purity and bliss hereafter ?

That the want of personal cleanliness, and the dirty condition of a large proportion of the houses of the working classes, is one of the greatest barriers to their improvement, cannot be questioned by any one who has investigated the subject, and it is no less certain that the first step in the downward course most usually begins with want of cleanliness ; disease, depravity, and vice follow in succession. Yet few persons, however poor, cannot be clean if they will. Neglect of personal cleanliness leads to neglect of household cleanliness, and the latter undermines everything approaching to domestic comfort, even if it does not, as is too often the case, render the dwelling, instead of being a happy home, the very centre of moral and physical contagion.

Lest ignorance be pleaded in excuse for the neglect of the duties here enjoined, your attention, and especially that of your wives, is particularly directed to the following details, as a practical illustration of the most important requisites in household cleanliness.

The floors and stairs of your dwelling should be swept daily, and cleaned at least once a week. The walls and ceilings, if not whitened every year, as they should in most cases be, ought never to remain two years without thorough cleaning.\* The chimneys in use ought to be swept

\* Colouring in distemper, or water-colours, is better and more economical for the working classes than either paint or paper, as it may be done by themselves, and consequently more frequently, at a trifling expense. A little whiting and size, tinted with colour to suit the taste, is all that is necessary. Whitewash for ceilings may be prepared by mixing whiting with water, quite smooth, and about as thick as cream ; size is added to make it adhesive. Both walls and ceilings ought to be washed clean previous to recolouring.

at least every six months. The windows ought to be frequently cleaned, and repaired when broken, not patched with paper. Carefully avoid all accumulation of refuse or filth in the sink, and see that the pipe leading from it to the drain is properly trapped. Where there is a wash-house it should be kept perfectly clean. Ashes or other litter ought not to be deposited near to the entrance or to the back door. The out-house should be kept in a clean and decent state; and on no account have pigstyes close to the dwelling, that fever or cholera be not attracted to your abode.

The numerous regulations for personal ablution, and others of a general, sanitary character, contained in the books of Moses, were doubtless intended to promote the health and longevity of the Jewish people, as well as to impress upon them the necessity for moral cleansing. In both these points of view they deserve the serious consideration of the working classes.

The practice of hanging damp linen either in the living-room or the bed-rooms cannot be too strongly deprecated; the impurity of the air thus engendered, and the damp imbibed by the walls and bed-clothes, is a frequent cause of disease. When the weather or circumstances will not admit of clothes being dried in the external air, the wash-house or scullery is the only place where they can be hung with safety.—If the opportunity of using a public wash-house be afforded, do not neglect it from the false idea of economy, to the great detriment of health, comfort, and probably of domestic happiness.

There are but very few cases in which these simple rules cannot be fully carried into effect; in some instances, scarcity of water is an obstacle; and in other cases the situation of the dwelling may be unfavourable to efficient drainage; yet every one has the power of doing something towards improvement, of trying to help himself instead of waiting to be helped, and of exerting himself to remove or overcome inconveniences instead of giving way to such as may surround him. Efforts like these are sure to be rewarded, if not by complete at least by partial success, and they stimulate as well as encourage those who have the means of increasing the facilities afforded to the working classes for improving their homes; whilst nothing can tend more to discourage such exertions on their behalf than the want of effort and co-operation on the part of the working classes themselves.

In further pursuing our inquiry we must now allude to the great importance of an adequate supply of pure water and of efficient drainage. In many towns the labouring classes, in common with their more wealthy neighbours, suffer much both from deficiency in quantity, and inferiority in quality, of the water with which they are supplied—this is especially the case in the metropolis; and the uncomfortable, filthy, and consequently unhealthy state of the homes of the working classes is in many instances greatly attributable to this general deficiency.

That to the neglect of the sanitary condition of the dwellings of the labouring classes may in great measure be attributed the awful ravages made by the cholera, is evident from the fact that in none of the Model Houses in the metropolis did a single death occur during the whole visitation, whilst in houses closely proximate the cases of fatal attack were very numerous. In one nearly opposite the George-street Model Lodging House, several deaths were caused in a few days by a cesspool under the cellar.

Mr. Simon, the able medical officer of the Corporation of London, estimates that, of the 52,000 deaths which occur annually in the City of

London, one-half might have been averted by the use of means at our disposal, whilst the untold amount of acute suffering and lingering disease caused by neglect is beyond calculation. Nor is this sacrifice of human life and loss of health through neglect confined to the metropolis, it unquestionably extends, in a greater or in a less degree, to every large town throughout the kingdom, and even to many small towns and villages.

The contrasts, however, which exist, show how much depends on the inhabitants themselves; take, for example, the evidence of a public inspector, who thus writes—"One marked and favourable peculiarity even amongst the poorest Norwich weavers, is their strict attention to cleanliness and decency in their dwellings—a token of self-respect and a proof of ideas and habits, of which the severest privations in food and dress did not seem to be able to deprive them. Their rooms might be destitute of almost all the necessary articles of furniture; but the few that remained were clean, the walls and staircases whitewashed, the floors carefully swept and washed, the court or alley cleared of everything offensive; the children wearing shoes and stockings, however sorry in kind, and the clothes not ragged, however incongruously patched and darned. 'Cleanliness and propriety,' said one man, 'are, in spite of our poverty, the pride of Norwich people, who would have nothing to say to dirty neighbours.'" This laudable peculiarity is not confined to the county town, but is manifest also in the cottages of the Norfolk peasantry, many of whom, though in receipt of wages not exceeding eight to ten shillings per week, add to scrupulous cleanliness a degree of taste, which is manifested by the table coverlet, the chair back net, and the chimney ornament. In contrast, let us hear the evidence of a clergyman, the Rev. Charles Hensley, who says of Gainsborough—"Smoking is very general among the women, and opium eating prevails very commonly amongst the poor. I think that both these habits foster idleness, and in consequence their houses are not kept clean and tidy. The men find nothing but discomfort on returning from work, and resort to the public-house, and the extent of drunkenness may be partly attributed to that. I am of opinion that uncleanliness and discomfort cause the females to use the stimulants I have named. I think there is no doubt that those (districts) in the worst sanitary condition are lowest as to their social and moral state."

Innumerable witnesses might be quoted to prove the frightful extent to which the homes of the working classes, instead of being the abodes of peace, joy, and happiness, are the very reverse, and this in no inconsiderable degree through either their own misconduct, improvidence, or neglect.

My desire is not only to impress on your minds the magnitude of the evils brought under consideration, but also to point out and enforce the remedies within your own reach; and in commanding them to your serious reflection, with the firm assurance that the state of the homes of the working classes is intimately connected with their best interests, as well as their physical health and comfort, I will not conceal my settled conviction that the Word of God, made the guiding rule of conduct, alone gives security for the enjoyment of a truly and permanently happy home; whilst the practical effects of a disregard for its sacred precepts are nowhere more obvious than in the home of the drunkard, the spendthrift, and the sensualist, of those whose vicious habits have rendered them insensible to dirt and wretchedness.

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## THE BROTHERS' QUARREL.

IN the year 1066, that is, nearly eight hundred years since, William the Conqueror ascended the throne of England. He came from Normandy, in France, and fought a great battle with Harold, King of England, on landing. This was called the Battle of Hastings, because it took place at Hastings, in Sussex.

William was a very brave king, but stern and determined. He had three sons, Robert, William, and Henry, who I am sorry to say were quarrelsome to each other, and undutiful to their father. I believe Henry was the best of the three, but Robert and William were very passionate. Sometimes the two younger boys would tease Robert till he was very angry, and did or said something wrong; and then they would tell their father of him and he would be punished. Sometimes William and Robert would tease Henry and make him cross; in short, they each wanted to have their own way, and neither liked to give up to his brother. William, the second boy, had red hair, and was called William Rufus, because 'rufus' is Latin for 'red,' and he had a trick of stammering, so that when he was in a passion, he could hardly speak; he was also very sly, and could not be depended upon. If his father told him not to do a thing, he could not be sure he would not do it, even though he had promised; and he would act in his father's absence as he would not dare to do before his face. Such conduct in a child is very contemptible. Boys who are sly and deceitful make sly and deceitful men: men not to be trusted or depended upon. Oh! I like to see a boy with honour and truth stamped on every action, every word, every look; a boy of integrity; one whose word you may trust, and whose honour you may depend on, under any circumstances!

William Rufus was deceitful, because he thought not of those words which a child should never forget, "*Thou God seest me.*" I am afraid he did not love God, or pray to him; for, instead of growing better as he grew older, he grew worse and worse. He would tell tales of his brothers, and pretend that he was very good himself; and did not care how they were punished, so that he escaped.

Robert, the eldest boy, was passionate also, but he was generous and open-hearted; there was no slyness about him, though his thoughtlessness and fiery temper often brought him into trouble. He was very brave, and very fond of his mother, Queen Matilda.

Henry was a handsome, good-tempered boy, fond of reading, and yet ever ready for a little fun and frolic; but alas! he liked his own way as well as his brothers, and many were the quarrels and disputes in consequence.

When the king and queen knew of their disputes and quarrels, of course they were very sorry; but as the king was severe, the boys were afraid of him; and having a great deal of business to engage his attention, he did not hear so much about their conduct as he might have done.

One fine day, the three young princes were all assembled in a room in the castle in which they lived. They were now no longer little boys, but growing up tall and strong. Still, they quarrelled as much as ever, or even more; for bad passions grow with our growth, and strengthen with our strength, unless checked by Divine grace. How happily they might have lived together if they had lived in peace! They had a fine large castle to live in, and parks and gardens to walk in, and ponies to ride on, and plenty to amuse them, and yet they were not happy, because they

were unkind, and selfish, and passionate. They did not live by the golden rule. "Do unto others as you would they should do unto you."

"Henry," said Robert, "lend me that book, will you?"

"No, I cannot," said Henry, "I want it myself."

"But you are not reading it."

"I am going to read it, though, and you can find another. William has laid his aside, you can have his."

"No, you can't," said William, "I don't forget what you did yesterday : riding fast when I wanted you to ride slowly, and going just the very way I did not wish to go, because you must see the soldiers, indeed!"

"You think you are to lord it over us, I suppose, because you are the eldest, but you will not be *my* master, I can tell you."

"Yes, I am the eldest," replied Prince Robert, "and when I am king, I will have the rights of the eldest too. At present you manage to deceive my father, and by telling tales of me, make him think the faults are all on my side, but the truth will come out some day. I cannot bear sneaking fellows and tell-tales ; and when I am King of England, I will have none in my court."

"You are not sure you will ever be King of England," said William, in anger ; "and if you are, you waste your money so, that you will be but a poor king, at all events. To think of giving a piece of silver to that man who made up a story of his cottage being burnt down ! I dare say it was a falsehood. You had better have kept your money in your pocket."

"But, William, the poor man said he was starving, and why should I doubt his word?"

"Nonsense ! I know if ever I am king I will get money and keep it too," replied William. "I will make my subjects obey me ; and oh ! how I will hunt ! I am glad my father has made that new forest in Hampshire, and turned out all the poor people. I hear they looked very miserable at being obliged to leave their cottages—but what a capital place it will be for hunting, will it not, Henry?"

"Perhaps it may," replied Prince Henry, "I am not so fond of hunting as you are. If ever I should be king, I hope I should be just to my people, and kind, and wise ; not squandering away my money, as Robert often does, or being so greedy of it as you are. But I would have books, and learned men at my court, for I think a king should be clever, and encourage clever men."

"Well !" said Prince Robert angrily, "you both talk of being kings, forgetting there is no chance of such a thing. The throne of England will be mine on our father's death, and cunning and clever as you are, you shall not deprive me of it. I know you try to lower me in the king's affections, but I have friends, and that you will see."

So saying, Robert strode out of the apartment.

"What a passion he is in !" remarked Henry : "I wonder where he is going."

"Oh ! to take a ride most likely," replied William ; "he is so proud of being the eldest. Henry, I wish we could do something to tease him."

"But we must not tease him much, William," said his brother, "because my father has forbid our quarrelling, you know."

"No, no, we will not do too much ; just some little thing to put him in a passion. Oh ! I have thought of it !" said this naughty boy, as he cast his eyes round the room ; "there is that jug of water, which was brought in just now ; let us throw it over him as he passes through the court to go

to the stable. It will give him a good drenching and spoil his fine clothes."

"Ah! that will be capital fun!" replied Henry, laughing; "and that will not hurt him either. Now let us bring the water to the window and watch for him. Here he comes, William! Here he comes! looking so grand; and his sword by his side too. Ah! he little thinks what is in store for him; how proudly he walks along! poor Robert! do you think, William, it is quite *right* of us to tease him? You know he never tells tales of us to my father, and he was very kind and generous to me the other day when I was in trouble. I don't think I will throw down the water."

"What nonsense!" said William, "It is only a good joke, it will not hurt him; I am sure he would do it to you in a minute. Now, be ready, Henry; here he is, just under the window. That's right! there it goes, all over him."

Splash went the water on Prince Robert, giving him a complete drenching. Startled at such an unexpected event, he looked hastily up, and his eyes flashed with anger and indignation, when he saw, by the laughing faces of his brothers at the window above, that they had been the offenders.

Uttering an exclamation of rage and revenge, he drew his sword, and rushed into the castle. Conceiving the foolish trick which his brothers had played to be a studied insult to him, his passion knew no bounds; he sprung up the stairs with fury on his brow, and, with his sword drawn in his hand, flew into the room. In his violence and anger there is no knowing what rash act he might have committed, had not his attendants followed him up stairs and hastily interposed. They however could not appease the tumult; for William and Henry, angry at the reproaches of their brother, used violent language in return; and the quarrel grew to such a serious height that the king himself was sent for to put a stop to it.

This he found no easy matter, for the castle was in an uproar, some taking the part of Prince Robert, and some of his brothers. William the Conqueror, brave and determined as he was, could not conquer the unruly passions of his own children.

At last, however, with some difficulty, peace in some measure was restored; but not till Prince Robert had expressed his opinion that his father took the part of his brothers against him, and that he would no longer submit to such treatment.

That night Prince Robert left the castle, Undutiful to his father, and ungoverned in his temper, he would remain at home no longer. And now came the sad effects of these foolish boyish quarrels. Children do not think enough to what their quarrels may lead. Every unkind word or action from one child to another is but sowing the seeds of enmity, and loosening that holy tie of brotherly love which ought to bind a family together. The rising passion *must* be checked, and love and affection cherished between brothers and sisters, or much future happiness will be the consequence; distrust and jealousy and coldness and selfishness are too often the result in after life of quarrels indulged in childhood.

What a beautiful, happy sight is that of a family living in love and harmony! Affection, gentleness, forbearance and self-denial, mutually practised by young and old; by the little girl as well as by the manly boy; each day as it passes, serves to cement that sister's love, and to strengthen the affection of that kind and protecting brother. The Royal Psalmist speaks with rapture and admiration of such a sight, "Behold, how good and how pleasant it is for brethren to dwell together in unity."

Alas! the reverse had been the case in William the Conqueror's family.

From childhood his sons had given away to passionate, quarrelsome tempers, and as they advanced to man's estate, these tempers strengthened. Prince Robert now threw off all submission to his father, and even took arms against him. Yes; generous, brave, and with many good qualities, this prince, overcome by jealousy and passion, was now fighting against his own father! In one battle he nearly killed him! The king and the prince were both clad in armour, so they could not see each other's faces, and consequently did not know each other. In the fight, Prince Robert wounded the king and struck him off his horse. On seeing then who it was, Robert was filled with agony and grief at the thought that he had been nearly guilty of the dreadful crime of killing his father. Springing from his horse, he cast himself at the king's feet, and implored forgiveness. William was so angry that he would not listen to him then, and rode away; but some time after, Queen Matilda, who dearly loved her son, prevailed on the Conqueror to pardon him.

"But did King William leave him the throne when he died?" asked George.

"No; he left his second son, William, as his successor. This occasioned fresh quarrels between the brothers; for Robert said, as he was the eldest, the crown belonged to him. The people would much rather have had Robert for their king, for he was generally a favourite, while William was so fierce and covetous, that no one liked him. So there was a great deal of fighting between them, but William kept the crown. At last they made friends with each other, but it was only to fight against Prince Henry. The king had left his youngest son a sum of money, and to Robert he had left Normandy, in France. Robert spent his money so fast that very often he had none left, so he told Henry he would sell him part of Normandy, if he liked to buy it. Henry bought it, and gave Robert the money; and now William and Robert agreed to make Henry give back the land. This was very wicked conduct; they besieged their poor brother in his castle, and kept him there so long that he and his friends were all but starved for want of food. I cannot tell you what they suffered; it is dreadful to think of brothers being so cruel. At last, when they had not a morsel of food in the castle, and had eaten nothing for some time, Henry was forced to let his unkind brothers in; and he, with his faithful friends, wandered about, many weeks, in great misery and without a home."

"Oh!" said little Kate, "I think they were very naughty indeed, they could not have felt happy themselves, aunt?"

"No, my love, far from it. William Rufus, King of England, when his conscience smote him for all his deceit and cruelty, was most unhappy and miserable. To put away such thoughts, he used to go out hunting; and one day while in the New Forest, which his father had made, an arrow aimed at a deer, by Sir Walter Tyrrel, accidentally struck him to the heart. No one was sorry when he died, not even his brothers. Prince Henry did not even wait to have him buried, or to see his body carried away from the Forest, but setting spurs to his horse, rode away to London as fast as he could, and persuaded the people to crown him instead of Robert, to whom the crown belonged. This made Robert very angry, and he raised an army to attack his brother, but Henry persuaded him to give it quietly up for a sum of money. They were good friends for about two months, and then fresh quarrels broke out, and the sad end of it was, that King Henry took his brother prisoner, and shut him up in Cardiff Castle. Poor Prince Robert! For eight-and-twenty long and tedious years he

remained a captive in that lonely castle, and then he died ! His daring courage, his generosity, his truth, and honour, were all now of no avail ;—his life had passed in quarrelling with his brother, and now that brother had taken his revenge. Oh ! my dear children ! whenever you feel inclined to dispute about trifles, think for a moment to what childish quarrels may lead ! Think of the captive prince—had he and his brothers lived peacefully and happily together when they were young, such would not have been his sad and melancholy end.

“ Across that sea, the Bristol Channel, which you are so fond of looking at, Edward, are still to be seen the ruins of Cardiff Castle. There Prince Robert must have passed many a lonely hour as he thought with sorrow of his past conduct ; of his unkindness to his brothers, and their unkindness to him.

“ And King Henry was far from happy. From the day on which he shut up his brother, his mind was filled with remorse. His conscience was always upbraiding him, and though he made a good king in many respects, he was far from being a happy one.”

“ Then why did he not let Prince Robert out of that gloomy castle, if he was sorry for having put him there ? ” asked Edward.

“ He was afraid his brother might try to be made king. Robert had a dear little boy, about six years old ; a child of uncommon beauty, and his father was very fond of him. He wished to see him very much, but King Henry would never allow it, and even wanted to shut him up too ; happily some faithful friends took care of the poor little boy.”

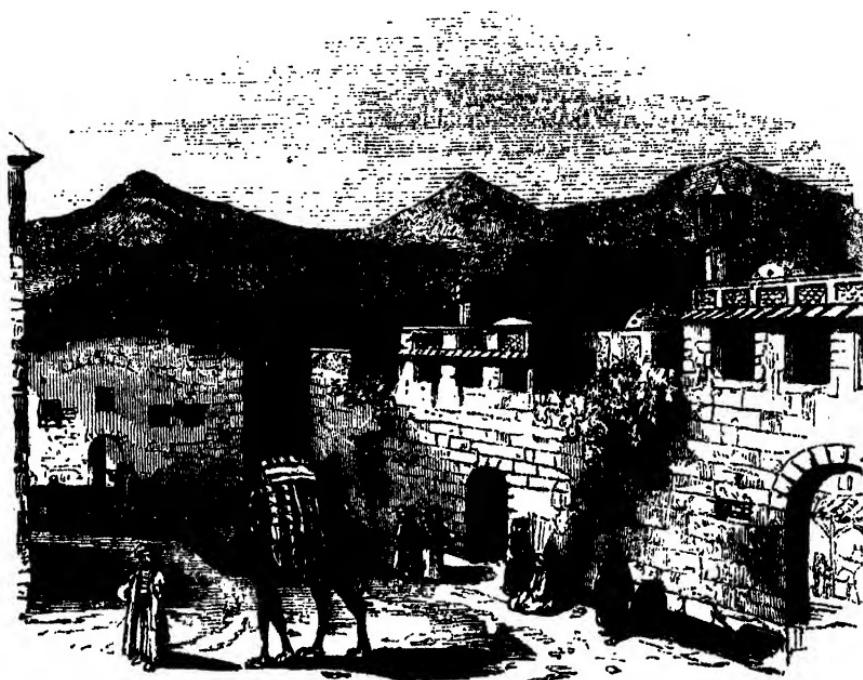
“ This is a very sorrowful story, dear aunt,” said Florence, as Mrs. Gordon concluded ; “ none of the brothers were happy ; but I think people who quarrel never are so.”

“ They are not, my love. The Bible tells us to ‘ *be kindly affectioned one towards another, with brotherly love* ;’ and some of the last words of our blessed Lord to His disciples, were, ‘ *A new commandment I give unto you, that ye love one another; as I have loved you, that ye also love one another.* ’ Remember those words, my children, and do not give way in childhood to the evil passions of anger, revenge and selfishness, lest they grow upon you, and embitter your future life. Cultivate amongst yourselves a constant spirit of kindness and self-denial ; each must give up a little ; each must think of the other’s happiness ; and love, like a golden thread, running through all your words and actions, you will be a united family, and mutually strengthen and support each other through the rough storms of life.”

THE  
**HOME FRIEND;**  
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SEA-COAST AND SHORES OF CILICIA, SYRIA, AND PALESTINE.



TERSOUS, THE ANCIENT TARSHISH (TARSUS).

CILICIA was the name given to a country bordering the northern coast of the east end of the Mediterranean Sea; its ancient capital was Tarshish, well known as a city of no mean repute and as the birthplace of the Apostle St. Paul. Cilicia is now comprised in what is generally termed Karamania, or Asia Minor; its chief town is Adana, though in point of fact Tersous, the modern Tarshish, may, in a commercial sense, be still considered the capital of Cilicia. Great changes have, however, come over the face of the country, and its reputation for learning and riches been much altered since the days when the Apostle referred to Tarshish as his native town

with manifest affection and pride. It would appear evident that at the time St. Paul was a child, Tarsish contained many learned instructors, under whose charge the children of the better sort of inhabitants received a twofold education; they were both instructed in languages and other necessary accomplishments for a gentleman of that age, as also taught some useful art which they might fall back upon should necessity urge such a measure in after life. St. Paul himself was by trade a tent-maker, an occupation still existing to some extent in Cilicia, though now chiefly confined to the migratory Turcomen tribes, men who, though ignorant in every other respect, excel in the manufacturing of carpets and tents. If the Romans introduced into Tarsus their favourite athletic games and theatres, no relic of them is now to be observed, and this is the more singular as such *débris* of their ancient splendour are everywhere to be met with where once these Roman colonies flourished.

It was a glorious spring morning! the day was just breaking, and golden-fleeced clouds, hovering over the lofty snow-topped peaks of the Taurus, were being fast detached, avant-couriers of the rising sun; there was a balmy freshness in the gentle morning breeze, sporting with the rippling waters, and wafting sweet odours from the still distant shores of Cilicia, as we rapidly neared that venerable coast, with hearts overflowing with gratitude towards that great and beneficent Being who had watched over us on sea and on land in our journeyings. The night had proved exceedingly close and oppressive, though the season was yet early spring, and one by one as the weary occupants of the confined berths clambered up on deck to participate in admiring the glories of the breaking day, their faces lit up with cheerful happiness as the balmy breath of heaven renovated their languid and relaxed bodies, and caused them to exclaim, as though by mutual consent, "Thank God! this is indeed delightful!" As the vapours of night rapidly dispersed, the warmth of the sun's embrace flushed across our minds. "Thou dealest thyself ~~warm~~ light as it were with a garment, and spreadest out the heavens like a curtain;" the mists thinned and dissolved into vapid air, the tall masts of a dozen or two indicated the whereabouts of the anchorage; in a few minutes the long low range of coast became distinctly visible, and in a few more our vessel was at anchor in the roadstead of Mersine, the seaport of the noted city of Tarsus. Our steamer rode majestically in the centre of scores of vessels of various nations, all displaying their flags of welcome to our bulky ship. Far as the eye could stretch from N.E. to due North was a pleasant sandy beach; beyond this ~~sloping~~ embankment rutted out by the lashing of many tempestuous ~~waves~~; this elevation was occasionally thickly studded with trees and shrubs, from the graceful feather-leaved palm tree to the luxuriant wild myrtle that hung over the bank in natural festoons. A few little huts and whitewashed buildings indicated to us the village, and beyond all, contrasting beautifully with the gay tints of the morning sky, rose the sombre, snow-tipped Taurus—a long and uninterrupted line of prodigiously high mountains. Whilst we were contemplating this sublime picture of nature, a few men, evidently peasants, preceded by donkeys and mules laden with ploughs and other agricultural instruments, issued from the neighbourhood of where stood the village, and rapidly threading the sandy beach disappeared behind an angle jutting out into the sea; not, however, before they had scared away a company of jackals and hyenas whom we watched scampering over the sandy hillocks till these, too, disappeared from sight. The sun now flung the mantle of his glorious light over the prospect, and

nature awoke to the bustle and stir of the coming day. It was even a picture of the poetry and praises of David :—

"The sun ariseth and they get them away together and lay them down in their dens. Man goeth forth to his work and to his labour."

Soon after sunrise the quarantine boat approached our ship, and after the due formalities were gone through we were admitted to communicate with the shore, and accordingly landed, the surf beating so heavily upon the beach that the boat was obliged to be stranded stern foremost, and the passengers carried to the shore on the necks and shoulders of the boatmen ; when the sea-breeze fairly sets in then all communication with the shipping is suspended till evening, and most ships land and load cargoes during the night, under cover of the N.E. wind, which blows gently off the shore. When we had once landed we were treading upon ground formerly familiar to Paul and his companion Barnabas ; doubtless from this port they embarked for Antioch (Acts xi. 26), prior to that glorious epoch when the believers of the blessed Redeemer first assumed the title of Christians.

We found Mersine to consist of some two hundred huts and cabins, constructed of sun-dried bricks, and for the most part thatched with straw ; close to the sea-beach there were a few unpretending country-houses, the property of Europeans residing at Tarsus, who retreated here annually during the great heats prevalent in June, July, and August. Mulberry trees were extensively cultivated, and a few of the more opulent planters had orchards of delicious fruits, amongst which the orange and pomegranate trees were conspicuous. An old Italian, who had served with Nelson in the capacity of pilot, afforded us such cheer as his little lassanda could offer ; and through the medium of this veteran we were furnished with horses and guides to conduct us to the modern town of Tarsus, situated about eighteen miles distant from Mersine. On first emerging from the village we entered upon a plain thickly set with brambles, wild myrtles, and oleander ; here partridges and hares were plentiful, and the loud tramp of our horses' hoofs occasionally startled the jackal from his lair. The road was monotonous and wearisome ; no houses or cottages, and but very few trees, to be met with. After an hour's smart riding we reached the borders of a swamp, and skirting this marsh arrived at a more elevated position, from which spot the undulating meadows gradually and almost imperceptibly ascended till they arrived at an elevation considerably above the level of the sea. On passing the marshes we observed that the great heat of the sun had already baked up a considerable portion of their margin, the putrefying rushes and vegetable matter, the countless dead frogs and insects there, all helped to impregnate the air with deadly vapours, and contributed in accounting for the sickly, wan appearance of such stragglers as occasionally passed us, and in confirming the noted insalubrity of the modern Tarsus during the hotter months of the year. Wherever large sheets of stagnant water were discernible, the surface of these pools was animate with countless waterfowl ; clouds of wild ducks, swans, geese, teal, &c. &c., were hovering over dank-looking bulrushes, the shrill cry of the startled snipe resounded through the air, and the mournful notes of the golden plover were caught up and repeated far and near.

The mountains to our left seemed scarcely half a mile distant, and from amongst them a singularly-constructed mound, in the centre of which a deep chasm was perceptible, was pointed out to us as the cave of the famous seven sleepers, where to this day, according to equally absurd fable, numerous jars of gold are secretly concealed.

The hour of mid-day was resounding from the minarets of the Turkish mosques as we passed under the arches of the stately old gateway of the high-walled city, and found ourselves threading the streets of Tersous. Here, then, we were actually riding through the native city of that devout and exemplary Apostle, St. Paul ! This was the city of no mean repute in Cilicia—a city supposed to have obtained the privileges of a Roman colony because of its firm adherence to Julius Caesar ; whose merchants were some of the wealthiest shipowners in the world ; and above all where the earlier teachings and preachings of St. Paul, when he is supposed to have fled hither from the persecuting Jews of Jerusalem, led to the conversion of many, and partly laid the foundation of that glorious faith which must lead to the overthrow of every system of idolatry. Alas ! for the frailty of human nature and the short-lived glory of man's handiwork, there is nothing save history to testify of what the modern Tersous once laid claim to. Near the gates are the wretched mud hovels of some hundred poverty-stricken, fever-enfeebled peasants, whose miserable, attenuated forms speak volumes as to the climate ; the very fowls and domestic animals partake of the general unhealthy leanness ; and the number of dead carcases, carelessly thrown into the streets, proclaim a murrain to have existed amongst the cattle, of which the dogs and cats have come in for a due share. Passing by these abodes of misery we gradually penetrated into the more aristocratic quarter of the town ; the lofty and well-built houses of Turkish Effendis and Greek and Armenian bankers and merchants, surrounded by pleasant courtyards encircled by high walls, over whose tops the taller citron and apricot trees displayed a rich profusion of green fruits and blossoms, all maturing day by day to the harvest. Each mansion had a lofty entrance gateway thrown open only for the convenience of camels and other laden beasts of burden : in the thick pannels of the gateway an ordinary-sized doorway was cut out sufficiently large to admit of people passing in and out without being obliged to unlock the massive bolts of the heavy portals ; all these houses were upper storied, for the nights were so sultry that all the inhabitants were compelled to sleep upon the terraces ; and even the jealous Turk, who would fain exclude the women of his household from public gaze, even he is compelled in self-defence to comply with usages of the country, and in contradistinction to all other Turkish towns the houses were liberally pierced with windows, all however trellised in for privacy's sake. Passing the house of an Armenian gentleman who filled the onerous and important post of banker to the Pasha, we were favoured with a sight of the interior arrangements of the courtyards attached to the houses ; here the gates had been thrown wide open for the admission of several mule-loads of fir planks sawed and fit for immediate building purposes. This Armenian was contracting for a large supply of timber to the Egyptian Government, and purchased these planks at the rate of two farthings sterling apiece, each plank being eight feet long by one and a-quarter broad and two inches thick. Timber remains to this day one of the many rich products for which the coast of Cilicia was famous. The courtyard was neatly paved with flagstones and trellised over with woodwork, pleasantly shaded by the thick foliage of several prolific vines. Oranges, pomegranates, citrons, apricots, and plums were amongst the trees planted round the borders, and in the centre of the courtyard was an arbour, over which creepers were neatly trained. This arbour was surrounded by a profusion of rose-bushes, jessamines, and geraniums. The alcove, or entrance to the house itself, and the two

large windows on either side, are effectually screened from the sun by a balcony, surmounted by a terrace communicating with the rooms in the upper story, and which terrace in its turn was covered in with thatch-work used only for the summer months. Continuing our line of march we entered upon the bazaars, a long succession of streets covered in with thatch-work : here all was bustle and confusion ; public water-carriers were sprinkling water before the shops of the different vendors of stuffs ; men with metal jars under one arm and a gaily-coloured cup in the other were inviting the thirsty multitude to partake of a sickly beverage composed of liquorice roots and water. In the bazaars themselves all sorts of commodities were exposed for sale—manufactured cotton and woollen goods, silks and satins, carpets and tent-cloths, sashes, turbans and red caps, drugs and sandal-wood, coffee and pepper, beads and tin pots, amber mouthpieces for pipes, muslins and gaily-embroidered veils, coarse-looking soap, chintzes and cream cheeses, salt, honey, and dried fruits : these were a few of the amalgamated stores which constituted the shopkeeper's stock in trade ; whilst ever and anon we passed through an open space somewhat resembling a square, in the centre of which heaps of grain, consisting of wheat, barley, maize, linseed, and sesame seed were piled as samples of the last year's crops, plentiful supplies of which were warehoused in adjacent storehouses and granaries. Emerging from this Babel of confusion and commerce, we threaded a long street running parallel with and at the back of the town : on either side were public baths, coffeehouses, and mosques ; not a single relic of Christianity, nor even so mean a house of Christian prayer. It appeared marvellous to us that whereas indefatigable missionaries from England and America underwent every hardship and persecution in China, Siam, and those distant countries, that a place so near England, and so comparatively easy of access, should be so utterly neglected. Alas ! for St. Paul's native city, there is not one labourer in the field, though the field for occupation is wide, and the harvest might be plentiful. In Tarsus there are no Roman Catholic priests, and the Christian portion of the population is composed of Greeks, Armenians, and a few Italian and French Catholics : the only Protestant in the place was Her Majesty's Vice-Consul, of whose hospitality we were partakers.

A pleasant stream, supposed to be a branch of the Cydnus, ran through the town and supplied the public baths with water ; the banks of this stream was a favourite resort of many during the sultrier hours of the day. Nothing could be more enchanting than the beauty of this part : whilst luxuriating under the pleasant shade afforded to this limpid stream by numerous citron and orange groves, we inhaled the sweet odour of their blossoms, and watched the silent manœuvres of whole fleets of domestic waterfowl ; behind us were high garden walls, over which protruded the thickly-clustering fruit of the famed Latachia apricot, the earliest of the summer fruit in Asia Minor ; before us were the extensive plains of Adana, with ever and anon a troop of fleet gazelles sweeping across the prospect. Truly few could conjecture, whilst gazing on that panorama, that modern Tarsus was the city of death and desolation to hundreds of its inhabitants.

The sun was fast setting in the west when we regained our saddles and urged our weary nags back towards the sea-shore, and we quitted Tarsus under the firm persuasion that such a country, so bountiful in every good gift of nature, might yet rise under better auspices, to rival if not to eclipse the city of no mean repute in Cilicia, were its inhabitants Christians, and its governors children of the Cross in lieu of the Crescent.

## THE FALLS OF NIAGARA.



NIAGARA is a large river of North America uniting Lake Erie with Lake Ontario. The distance between these lakes, through which the river has to descend, is about thirty-three miles, and the difference in level is three hundred and thirty-four feet. For the first twelve or fourteen miles, the river flows with a gentle current. Its width is about a mile, until it arrives at Grand Island, where the stream is divided into two arms. About ten miles lower down these arms unite, and the width then becomes about two miles. After this it suddenly contracts to less than a mile, and the rapidity of the current increases from three to seven or eight miles an hour. The banks of the river soon rise from ten to fifty feet, and the waters proceed with great force and rapidity over a series of rapids, until their course is changed by high rocky banks, and the waters seem for a moment to regain their tranquillity. But again rushing on, the stream is divided by a small island into two unequal channels; and gaining a tremendous impetus by means of a steep inclined plane, the whole mighty mass of waters is suddenly projected over the edge of a rock, one hundred and sixty feet in perpendicular height, into a black and boiling gulf below. The principal mass falls on the western or Canada side, and is about seven hundred yards wide. The other portion, falling on the American side, is subdivided into two portions by a small rock, and has a perpendicular fall one hundred and sixty-four feet, and a width of three hundred and twenty yards. The Canadian fall is generally known as the "Horse-shoe Fall," from the curved form of the ledge of rocks over which it is precipitated. Both these great bodies of water unite before they are lost in the gulf below. From the projecting form of the rocks, and from the tremendous

force of the torrent, the waters of the Horse-shoe Fall are sent forward to the distance of fifty feet from the base of the rock, so that visitors may pass behind this watery wall into a cavern, whither, at the expense of being drenched with spray, many have had the courage to repair. The vast body of water admits, as through a curtain, a greenish light into the interior.

The united waters fall for the most part in one unbroken sheet of a dark-green colour, until they meet a cloud of spray ascending from the rocks below. They then become lost to the eye, and the cloud of vapour rises one hundred feet above the precipice, and can be seen at the distance of seventy miles. Prismatic colours are always present, and complete rainbows, sometimes three at a time, and of the most brilliant hues, delight the eye. Below the Fall the river flows rapidly for four miles between banks from two to three hundred feet high. It then forms a terrific whirlpool, and rushes out at a narrow passage between perpendicular cliffs, whence it soon descends into the level country about Lake Ontario.

The thunder of the cataract has been heard at a distance of forty-six miles; hence the name given to these stupendous Falls, which in the Indian language signifies the *voice of thunder*. In general, however, the noise cannot be heard at a greater distance than eighteen or twenty miles.

A traveller on approaching the Falls describes the appearance of the cloud of vapour alluded to above. He says: "I had a distinct view of a tolerable compact column of white mist ascending perpendicularly to a vast height, where it apparently encountered a current of upper air, which broke it into small fleecy clouds that floated horizontally towards the sunny west, as far as the eye could reach. As I approached nearer, this column was truly beautiful; and before I had reached the immediate vicinity of the cataract, the sun had so far declined, that his slanting rays were magically reflected in a beautiful bow thrown across the river, varying in its splendour according to the density of the ascending spray."

Numerous dead fish are every day seen floating in the gulf immediately below the Falls, having been forced down the cataract by the rapidity of the current. Wildfowl, too, unmindful of their danger, or floated down while they are asleep, are unable to escape if once drawn within the verge of the main cataract. Some years ago, by way of experiment, a large schooner was towed down the river to within half a mile of the rapids, where it was cut adrift and left to its fate. "The rapids are caused by numerous ledges of rock, from two to four feet high, extending wholly across the river, over which the water successively pitches for about the distance of one mile immediately above the main cataract. The vessel got safely over the first ledge, but upon pitching over the second her masts went by the board, she sprung a leak and filled with water; but continued nevertheless to float, though she changed her position to stern foremost, in which manner she took her last plunge over the main fall, her bowsprit being the last part that was visible of her. She of course never rose more; but numerous fragments of her timbers and planking were picked up, some miles below, in very small pieces, bruised, torn, and shivered. There were two bears, and some other smaller animals on board of this vessel when she was cut adrift; but the bears seem to have had some unfavourable misgivings of the safety of the voyage, and therefore when she sprung a leak and floated stern foremost, they stepped overboard, and with much difficulty succeeded in swimming ashore after having been carried half way down towards the main cataract by the rapidity of the current. No trace of the smaller animals was discovered."

## THE WISE OLD MAN OF BAGDAD.

(Translated from the Arabic.)

MANY years ago, when the Caliphs of Bagdad were in the zenith of their glory and power, there dwelt at Bagdad a poor old peasant who had neither wife, nor child, nor stock, nor kin to cheer him in his old age, or support his tottering limbs till they should find a last repose in the grave. This old man's name was Houssein Abou-il-Ackal, or Houssein the father of wisdom. Houssein had been married in his younger days, and had had several sons and daughters; but the ruthless hand of death had spared neither age nor beauty, and one after another the afflicted father had witnessed the departure of the beloved wife of his bosom, and those tender, fair children whom he had hoped to see spring up like stately trees around him, to be the prop and the blessing of his old age. They all died, and the bereaved husband and father mourned for them with all the sincerity of deep affliction. Time, however, brought with it a balm. Houssein remembered that all things earthly are but finite, the enjoyments and pleasures of this world a fleeting bounty; that they

“Come like shadows, so depart,  
Seen by eyes to grieve the heart;”

and Houssein was consoled, at all events if he was not actuated by such philosophical reflections as the foregoing, he was possessed of a species of instinct which, for a Turk in those benighted ages, was marvellous in the extreme. Houssein was reconciled to his lot, and being a poor man, he was compelled to labour hard in the small landed possessions that he had inherited from his ancestors, so as to enable him to raise a sufficiency of vegetables and fruits, by the sale of which he might meet the daily cravings of nature. Sometimes, when he had been lucky in finding a ready customer for his goods, the old man would treat himself to a half-holiday; and on these occasions he amused himself by assisting his poorer neighbours in planning something for their benefit, doctoring a sick mule, or assisting the youngest son in planting out last year's mulberry shoots. He was a charitable old fellow, and being too poor to assist others with money, food, or raiment, he had recourse to this laudable method of bestowing a charity in his power, whenever he could in self-justification afford so to do. And may we not here pause a moment to remind our readers how incalculable is the power of doing good works when real intrinsic charity is to be found in the heart!

It may readily be conceived that old Houssein was a great favourite amongst his townsmen, and his small celebrity found its way even into the palaces of the great; so that the reigning caliph came to hear of the old man's notoriety, and determined within himself to some day put the veracity of the report to the test by personally witnessing the good deeds, and interrogating the guileless old peasant. To achieve this, the caliph set trustworthy spies on the watch, to report to him whenever a favourable opportunity should present itself for carrying out his design: this was not long wanting. One day the spies came in and informed the commander of the faithful that old Houssein was hard at work planting olive-stones in an uncultivated field that belonged to a bed-ridden neighbour, who was likely at his death to leave a large family behind him wholly unprovided for.

The caliph, having disguised himself as an itinerant pedlar, came upon the old man in the very height of his busy occupation, and after having

exchanged the usual salutations, thus rather abruptly accosted old Houssein :—

“ Friend,” quoth the caliph, “ you are a very old man to be sowing olive-stones ; you surely do not hope to live long enough to reap any benefit from your present labours ? ”

“ My son,” replied old Houssein, “ that is a very unwise question to come from one of your apparent ability and sense ; were all the world actuated by selfish motives, in the course of a few centuries the earth would become a barren desolation, and flowers and fruit cease to exist. I plant as others have planted before me, that coming generations may reap the fruit, and bless the name of him who planted, as I have blessed the memory of that man, whoever he may have been, that planted those trees that have supplied me with this seed.”

“ *Affareen !* Well done,” said the caliph, “ your wisdom and philanthropy are unrivalled in the kalends of the present times ; here,” he added, throwing towards the old man a few golden coins, “ here is a trifle that may purchase you a few comforts that your old age requires.”

“ See,” said the old man, smiling, “ you laughed at the idea of my hoping to reap a harvest from the labours of this day ; why, the seeds I have sown have already yielded me a more abundant profit than a similar number of trees would yield after twenty years’ toil and labour.”

“ Old man,” replied the caliph, “ I have greatly underrated your reward in that which I have bestowed, take also this,” said he, flinging a well-filled purse at the feet of the astonished old peasant, “ in your hands it will do more good than in the over-stocked coffers of the caliph of Bagdad.”

“ Defender of the faith,” answered the startled peasant, “ by your royal generosity I am enabled to boast what no man in Bagdad can brag of, *viz.*, that I planted olives, and reaped two wealthy harvests, all in the course of a few hours. Thanks be to Heaven ! since the good have their recompense even in this world.”

## MARY THOMPSON.



“ PRAY let that tree alone,” said a lady, addressing a little girl about eleven years old, who was picking off the bark of a fine elm, that grew near the entrance of a gentleman’s grounds. “ Do you not know that what you are doing is very injurious to the tree ? See,” added she,

turning to the lady who was with her, "what a large space has been entirely laid bare."

"I didn't do it," said the girl pertly; "it was there long before I ever touched the tree."

"Probably," replied Miss Sinclair; "but that is no reason why you should make it worse. Leave the tree," said she authoritatively, for the girl still held her hand upon it, nor had moved a single step.

"It's none of yours," exclaimed she, in a tone sufficiently loud for Miss Sinclair to hear, though apparently pronounced for the entertainment of her companions, who began to titter.

"What is that you say?" demanded Miss Sinclair, turning back a few paces.

"I didn't say anything," replied she.

"What is your name?" demanded Miss Sinclair: but no answer was returned. She then made the same inquiry of the other girls who were with her, one alone of whom made any reply, and that was no further satisfactory than that she gained from it that her name was Mary; whether she went to the school, where she lived, or what was her surname, were points her informant professed to know nothing about.

"It is as well for your friends," said Miss Sinclair, "that your name is not known; for impertinent children are not less a disgrace to their parents than objects of dislike to others. We may meet again, perhaps, when I shall not forget either your countenance or your words; for an insolent tongue, and a disrespectful manner, seldom fail either to make an impression not easily to be effaced, or to receive some degree of punishment."

The girl spoke not, but her looks sufficiently expressed her inclination again to answer. Miss Sinclair, however, walked on, and soon each was out of sight of the other.

Mary—for as such alone we will for the present know her—was, without any exception, the pertest girl in the village. Let who would speak, she had always an answer to make, and would have the last word, though numbers were present. Her manner, her appearance, the cast of her countenance, every feature, the movement of her shoulders, and the twist of her neck, and—if the expression may be allowed—the very sit of her clothes, and her way of putting on her bonnet, was pert. If her mother happened to say, "I like such and such a thing to be done thus; I think it the better plan;" Mary's head was at once in motion, her lip was raised, and "Do you?" was the reply; and sometimes even she would add, "but I don't." There was no mistaking the meaning of the action at any time; and so her father proved to her one evening, when hearing the words, and catching the expression that accompanied them, he raised the glove he had in his hand, and smartly struck her on the shoulder with it.

"Is that the way?" said he, angrily, "that you answer your mother? If ever I hear you speak in that manner again you shall have something still more to cry for than you have now." The blow had been sharp, and the pain caused by it severe, and Mary's tears flowed plentifully; yet even in that moment, so powerful was the force of habit, that she was on the point of uttering some reply—the determined look of her father, and the glance she caught of his uplifted glove, checked her, and made her thankful to escape.

She was the same at school. Mrs. Davis, the mistress, had more trouble with her on this account, than she had ever experienced from any girl before, and as yet she had found no means of effectually correcting her.

This was the more to be regretted, as she was really a very "handy" little girl, by no means inclined to be idle, and possessed, besides, very good sense.

With her brothers she was no favourite. "Miss Pert" was the name by which they generally distinguished her; and, while quarrels were frequent between them and herself, they rarely invited her to share in any pleasure that they proposed among themselves.

"Mother," said Frank, the eldest boy, "I will take my angle, and see if I can't catch a dish of fish for supper; it is just such an evening when the fish will bite as fast as I can throw the bait."

"Will they?" said Mary; "I'm glad you think so."

"No one spoke to you, Miss Pert," returned Frank, colouring with passion; "when I want a girl's opinion, I'll ask you for it."

One word of course led to another, and angry words and burning hearts were the consequence.

"O mother!" cried Mary one day when she returned from school, "what do you think Mrs. Davis has been telling us? The lady who has come to live at the Grove keeps a great many pretty birds, birds of *all* sorts, and she wants a little girl to help her to feed them, and attend to them. She is not to live there entirely, but to go at certain times of the day, so that it may not interfere with school-hours: they say she is such a nice lady; and everything about her is quite beautiful. O mother, I should so like to go to her! Don't you think Mrs. Davis might have spoken a good word for me?"

"Could she have spoken a *good* word for you, Mary?" said her mother, looking steadily at her.

"Could she!" repeated Mary, and the tell-tale toss of her head, and jerk of the neck, betrayed that Mrs. Davis's last exhortations and her own promises of amendment were forgotten.

"Mary!" said her mother, in a tone which recalled her to recollection.

She blushed, and in a more becoming manner said "Will you go with me, mother, and ask the lady to take me?"

Her mother consented; and it was agreed that they should go together in the evening. Seeing both dressed in their Sunday attire, the brothers inquired where they were going. Mary, with some importance, informed them.

"Well, 'take care,'" said one of them, "only mind that you leave 'Miss Pert' behind you, and then perhaps you may stand a chance to be nursery-maid to the birds."

"Nursery-maid indeed!" returned Mary; "who cares for such boys as you?" and her little slight figure became in an instant perfectly erect and statue-like, with the exception of the head and neck, which assumed its accustomed movement on such occasions.

"If there is another word spoken," said her mother, "you may go by yourself, for I will not go with you."

"As you please," were the words that hung on Mary's tongue, but she checked the utterance, and in silence they left the house together.

When they reached the Grove they were shown into an apartment and desired to wait; the door which led into an adjoining room was open, so, that the voices within were distinctly heard. Mary immediately recognised Mrs. Davis to be the speaker. "There is no one, ma'am," said she, "whom I could so confidently recommend as Mary Thompson, if it were not for the fault that I have mentioned. I am sure she would suit you in

every respect ; whatever she does she does well, and quickly too ; but she has such a tongue ! I cannot advise you to take her."

At that instant the lady to whom she was speaking, perceiving the figures of persons in the antechamber, arose and advanced towards it. Addressing Mary's mother as she entered, she inquired her business. Mary stole a look at her, but meeting her eyes, she hastily turned her head away. Had she seen her before ? She could hardly tell : her voice certainly did not seem strange to her, yet she could not think when or where she had heard it. Whilst her mother was enumerating her daughter's qualifications, and in natural terms commending her, Mary was amusing herself with looking at some beautiful flowers, which were tastefully arranged in a vase on a small table, near which she was standing. Fearful that she might be taking a liberty, her mother, availing herself of an opportunity, as she thought, of not being observed, shook her head, and by the motion of her lips, rather than by direct utterance, said, "Don't do so." But this was enough for Mary. "Not to do so !" she repeated, accompanying the words with the movement of her head so peculiarly her own.

"Mary Thompson !" said the lady, in a voice which made her start, "I require no one to tell me that you are she. Those flowers are none of yours—do you now recollect me ?"

Mary was almost ready to sink on the carpet ; she had never before been so completely subdued.

"Miss Pert" was, indeed, left behind. She coloured, trembled, and at last burst into tears. Her mother looked at her with astonishment. Miss Sinclair then related what had occurred at their first meeting, to the great distress of the poor woman.

"Mary," said Miss Sinclair, as she concluded her narration, "you may now see both the folly and the danger of impertinence. The conduct shown to a stranger might, without any other knowledge, now deprive you of a very great advantage. Our second meeting, like our first, is by no means calculated to give me a favourable impression of you ; but there is no habit altogether so inveterate as not to be conquered by perseverance and determination, and I would much rather be the means of your improvement than of your punishment. You shall come to me, but on this clear understanding—that if you repeat the fault I have thus twice witnessed, you leavē me in disgrace, and without any prospect of returning to me."

Mary went home humbled and mortified ; but if her brothers are to be believed, "Miss Pert" expired that evening, and though for some time after they had fears of her coming to life again, she has certainly up to this hour been to all intents and purposes dead and buried.

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#### NINEVEH.—WAR (*continued*).

THE small crescentic plate, probably of polished metal, which adorned the end of the pole, or the centre of the yoke, in the early chariot, became by enlargement and elevation a standard in the Khorsabad era. The general form was retained, a crescent, from the concave or lower side of which a stem descended, and rested on a base formed by two bulls' heads united, and the whole was set on a staff, which was affixed, probably by a socket, to the chariot pole. The surface of the crescent bore the figure of a vulture-headed priest, with arms and feet extended, carrying in each hand an implement resembling three points of a Maltese or Moline cross. The staff was supported by a line, connecting it with that of the principal

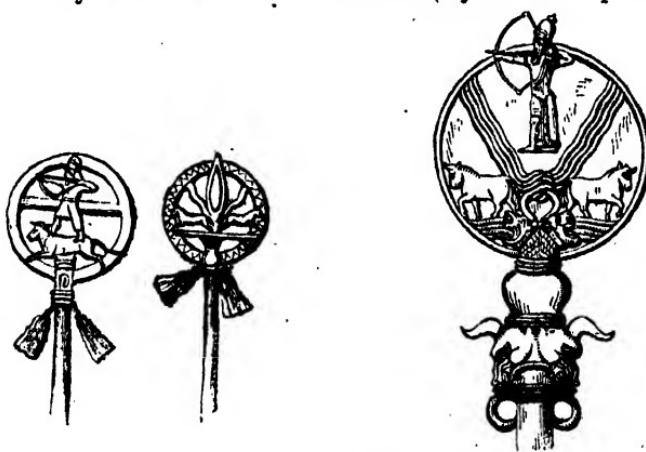
standard, which, as we have before observed, was stepped in a socket near the front of the car.

It was, doubtless, an ornament analogous in position and origin to this, that was attached to the yoke of Darius' chariot, over the horses' necks. It consisted of statuettes of Belus and Ninus, about eighteen inches high, with a spread eagle between them; the whole formed of gold. In the Persepolitan sculptures, however, we see it a simple crescentic disk, reduced to its original small dimensions, and not very diverse from the Nimroud examples.

Two principal standards were affixed to the front of a chariot. Each consisted of a staff with a circle at its summit, enclosing, in the one case, an archer wearing the horned-cap, standing on a galloping bull; in the other, two bulls placed back to back, with a sort of fleur-de-lis between them. Two tassels hung below each circle. In the Nimroud era these were the only forms used, and the former always had the precedence.



CRESCENT STANDARD.

STANDARDS (*Nimroud*).

The hand of one of the riders frequently grasped the staff, but it appears to have been for the purpose of steadyng himself and not it, for, besides the socket into which its butt fell, it was supported by a strong rope, that passed like a stay from the staff to the extremity of the chariot pole.

At Khorsabad a somewhat different form was adopted; the circle complicated with bulls' heads and lions' heads, and other peculiar devices, enclosed an archer above the space between two bulls; thus uniting the two standards of the more ancient period in one.

The paucity and simplicity of the Assyrian standards contrasted with the number and variety of those of Egypt and of Rome, in which many sorts of animals, real or fictitious, and other objects, were elevated on the tops of spears, and served as the rallying points for the divisions of the army, to which they were appropriated. The elevation of the ensign

upon a carriage was peculiar to Asia. The Persian standard was a golden eagle with expanded wings, fixed on a spear, and set on a chariot. And, long after, we find the same custom among the Saracens, "in the midst of whom," says Turpin, "was a waggon drawn by eight horses, upon which was raised their red banner." The crusaders introduced the fashion into England in the reign of Stephen; and thus the elevation of the royal standard of Henry V., at the battle of Agincourt, upon a car, may be traced up to a custom of the early Assyrians.

Standards and banners are frequently alluded to in the Sacred Scriptures, and the tribes of the camp of Israel in the wilderness were distinguished by peculiar ensigns (*Numb. ii: 2, et seq.*); but we possess no authentic information as to their forms or devices. Standards with devices on them are mentioned in the *Mahābhārata*, a Hindoo poem, the action of which is fixed at about 1200 B.C., though the composition itself is probably much more recent.

Banners, or flags, of textile materials, seem not to have been used by the more ancient Assyrians; but tassels depended from their standards. The royal banner of Persia, from the time of Feridoon to the Mohammedan conquest, was the leatheren apron of the blacksmith who headed a successful revolt from the tyrant Zohauk. Every successive prince thought it incumbent on him to augment its decorations, till at length it was almost literally covered with jewels.

Nothing is more remarkable in the sculptures than the gorgeous magnificence in which the chariot-horses are arrayed; and could we see the original colours with which they were painted, and, still more, could we have beheld the reality, the polished metals, the ornaments of stained and pure ivory, the necklaces, the plumes and coloured tassels, and the curiously wrought cloths, of various dyes, the trappings would have appeared far more splendid than our imagination depicts them.

We may consider them as the head-gear, the collars, and the housings. The first of these was in principle much the same as ours: the branches of the bit were transverse instead of being longitudinal, and formed a straight bar, widening at each extremity, to which, as also to the centre, the cheek-strap, dividing into three parts, was affixed. The rein was attached to the centre. A simple fillet passed over the forehead, and a throat-band was attached to the cheek-strap just behind the temple. There was, however, a second throat-band much more loose, attached to the head-stall at the poll. Sometimes a high arch of metal passed from the forehead to the poll, bearing on it some ornament, such as a large tuft of fringe, or an imitation of a flower. All the straps were embossed with some device or pattern.

In the later eras the form of the trappings had much altered. The bit formed an arc of a circle, the convexity towards the muzzle, and the rein was attached near the posterior end. The cheek-strap, head-band, and nose-fillet, were ornamented with large rosettes at regular intervals; the hinder throat-band was wide, loose, full of rosettes, or other devices, and terminated below the throat in a ball, from which hung three large fringe-tassels, one below another. A bell was sometimes substituted for this.

But what was most characteristic of the head-dress of this period was the huge massive frontlet, into which the simple fillet of the earlier age had grown. It was a thick mass, globose and bulging, on the forehead, but probably hollow, with the surface carved so as to resemble scales. We may conjecture that it was formed of metal, perhaps gold. The summit of

the head bore a crest of some kind; sometimes a triple tassel-shaped tuft; sometimes a helmet-crest arching forward, and more commonly a crescent, with the points downward, set on a footstalk, and surmounted by a ridge and a central tuft.



HORSE TRAPPINGS.

The reins were doubtless thongs of leather; but as they are coloured red in some of the Khorsabad sculptures, they may possibly have been gilded in the more sumptuous caparisons.

The collars by which the horse was attached to the pole for the purpose of draught were broad straps of leather that passed round the neck and chest. In the early time these were rather complex, and their form and arrangement will be understood by the accompanying engraving better than by the most laboured description.

They were distributed over a wide space of the chest, to render the pres-

CHARIOT-HORSE (*Nimroud*).

sure more easy ; the lowest was furnished with a row of fringe-tassels. Two straps passed under the breast, behind the fore-legs, to keep the others in their place, and one of these had a ring at the top, through which the rein passed. A large disk, carved, and furnished with several diverging tassels (usually three series of three each), hung behind the shoulder. The whole array of straps and bands was elegantly embossed.

The tail was always long, as was generally the mane. The former was commonly bound tightly round, near the middle, with a broad ribbon, or with a cord passed many times round in close series. Sometimes the end of the tail, made taper, was turned up to form a loop, and bound round. Both fashions were adopted at all periods ; the former the more commonly.

Of the materials used for the various parts of this elaborate harness, we can say little. It is probable that, as with us, leather was employed for the straps and belts, metal of some kind for the bit, rings, buttons, &c., and perhaps worsted for the fringes and tassels. The remains of paint on the Khorsabad bas-reliefs enable us to see that the tassels of the shoulderlet, of the chest-strap, and of the triple tuft-crown, were sometimes all blue, sometimes blue and red alternately. The thick frontlet, we think, was certainly of metal ; and as the scales were coloured alternately red and blue, it may have been of steel, inlaid with bronze (or gold). The bit was commonly, perhaps, of bronze or iron, sometimes of silver or gold embossed, or even set with jewels. Necklaces of gems were hung around their necks, reminding us of the chains with which the Midianite kings adorned their camels in the days of Gideon (Judg. viii. 26). The gorgeous housings were probably the same as those which formed the staple of Dedan's commerce in the markets of Tyre. "Dedan was thy merchant in precious clothes for chariots." (Ezek. 20 xxvii).

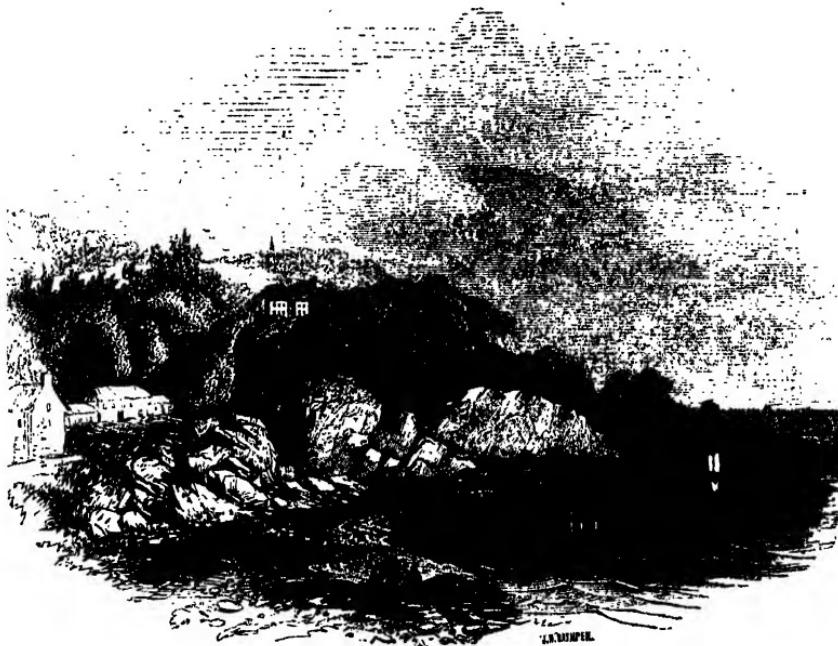
#### SEA-SIDE PLEASURES. No. III.

A FEW weeks ago I took a ride along the coast to a little cove called Barricane, about six miles from Ilfracombe—one of those spots which are counted *notabilita* in the neighbourhood, and which no visitor goes away without seeing. The peculiarity of the place is, that it has a beach entirely composed of shells, many of which are of rather rare kinds, and found nowhere else in the vicinity. I went thither, hoping to find some of the species in a living state about the rocks, and also to obtain other objects of interest to a naturalist. Hence I selected the time of spring tide, when the sea recedes to the greatest extent from the shore, and so timed my visit as to be on the spot at the hour of lowest water. A six-miles' excursion through such a country as the coast of North Devon, with such a termination, could not but present many objects of entertainment. I was so much pleased myself that I will endeavour to reproduce the jaunt, in the hope that it may not be without interest to many of the readers of the "Home Friend."

It was a lovely day, about the middle of August. The weather had been almost incessantly wet for a fortnight, and this morning had opened with a cloudy sky and a hazy horizon, that appeared somewhat dubious ; yet the forms of the clouds had a certain hardness and definiteness of outline that seemed trustworthy ; and early in the forenoon they all broke away, and left a sky of unsullied azure for the rest of the day, with a

blazing sun, and an atmosphere of unusual transparency, revealing the forms of the distant mountains with beautiful distinctness of outline.

I had started alone, but had scarcely left the outskirts of the town before I overtook a party, who, like myself, were bent on enjoying the amenities of Barricane. They had called a halt, and were "putting themselves to rights;" and as I could not but pass through the midst of the cavalcade, the evident community of purpose between us improvised an acquaintance, though we were strangers before. Let not the reader smile when he learns that we were all mounted on *donkeys*! The animal is an ancient one, and has borne many an honourable and honoured rider. His paces are easy; he is a sober, steady steed; and moreover, the rider, if consciously unskilful, is reassured by perceiving that the distance to the ground is not great. Besides, it is the custom of the country; and whatever sense of shame a stranger feels at the supposed lack of dignity in his mounting, soon wears off when he sees that every one whom he meets looks upon it as the right thing—a mere matter of course.



LEE, NORTH DEVON.

So away we sallied, in merry mood, followed by attendant boys—of whom the full complement would have been one for each donkey, but in the present case one had undertaken the government of each party—whose duty consisted in the perpetual application of a stout stick to the quarters of each animal, with such an expenditure of muscular energy as none but practised arms could supply. I wondered how any sticks could sustain the constant shock, and on inquiry learned that a part of the winter's employment is the cutting and drying of sticks for summer use, selected chiefly from the hazel and ash.

Our way out of the town lay along the Church Path, a narrow lane which skirts the little brook called the Wilder, half full of the tall and rank burr-reed, now covered with its singular globose flower-heads that resemble horse-chestnuts in miniature. The hedges that overhang the stream and border the lane were gay with autumnal flowers; the fine crimson blossoms of the great hairy willow-herb, and the close-set spikes of the purple loose-strife, were now the ornaments of the banks and ditches; and the trumpet-shaped flower of the white convolvulus was conspicuous among the tall brambles, as yet unruffled and unsullied in the early sun, like a fair bride arrayed in virgin white on her wedding morn, but destined soon (I mean the flower, not the bride) to be shrivelled and defaced. Over this little rivulet, and among these leafy bowers, I used in the spring evenings to hear the whispering crink of that little bird with an insect's voice, the grasshopper lark; but he has long ceased to utter his feeble notes, like almost all his tuneful fellows of the sylvan shades. Autumn cannot for a moment compete with spring in this great charm of rural scenes, the melody of birds: they almost every one cease with the early summer; scarcely a tuneful note is protracted beyond June, for song is the accompaniment of conjugal and parental love, and the duties of incubation belong to spring. There are, however, a few exceptions, and the robin is one of the most pertinacious of these. His sprightly melody, poured forth in short stanzas, saluted us from a thick elm overhead, and sounded all the sweeter that there was no competitor.

For about two miles the road gradually rises; but the view is bounded on the one side by the lofty down called Langley Cleve, and on the other by the almost equally lofty Torts. The hedges, too, are very tall, so that the steep road is not particularly interesting, except to such as can find delight in the simple flowers and herbs that present their unpretending beauties to the observer; and many of these, like the female loveliness of which they are so appropriate an emblem, must be wooed to be won, must be sought to be found. Several of our little party happened to be of the inquiring mood; and the ~~sugared sweet~~ of the honeysuckle, or the various forms of the ferns that grew luxuriantly on the shadowed side, afforded matter for entertaining conversation. Most of the latter were seedling, the backs of the fronds being studded with the *sori*, or clusters of dust-like spores, arranged in different ways, according to the species; and it was curious to examine with a pocket lens the varying forms of the little box-like involucres, within which the brown dust was concealed, and the diverse ways in which they burst, to liberate their contents. All these particulars have been fixed by the wisdom of God; and they have continued unerringly the same ever since the day they were created; for the laws which He has stamped upon nature are, like Himself, immutable, except when He is pleased miraculously to suspend them. The elegant fronds of the male shield-fern never produces oblong capsules, like the wiry *blechnum*, but invariably circular ones; nor are they placed along the margin, like those of the brake with which it grows, but scattered over the surface; nor do they open at one side, or through the middle, like those of the spleenwort and hart's tongue, but all round the edge. How clearly may we trace the constant superintending care of an all-wise God, without whose sustaining power the universe and all that it contains would collapse into its original nothingness!

At length this steep lane was passed; we went through a gate at its termination, and found ourselves on an elevated open down. It is called

Langley Open, and certainly the prospect which is suddenly *opened* to the view is most magnificent. With the exception of Langley Cleve, a large rounded hill on our left, this is the loftiest land hereabouts; the eastern horizon is visible over the summit of Hillsborough, which is about five hundred feet above the sea level. We all paused by common consent to admire the scene. From our feet the green down sloped away a few hundred yards to the edge of the precipice, in one direction indented to form a deep, fern-covered glen, which appeared as if it would afford an easy access to the beach: a deceptive promise, however; for the adventurer, after wending his difficult and hazardous way through the gully, would at length find himself at the margin of a yawning chasm, with angular, almost perpendicular, sides, and see the inviting little beach, perfectly inaccessible, a hundred and fifty feet below him.

From the position in which we were, however, we could not see any portion of the shore except the terminations of one or two projecting points of rock; but the hollow sound of the surf that was breaking over those points and rolling in among the boulders and pebbles, came pleasantly on the ear. The deep blue sea lay spread out in wide expanse, studded with shipping and bounded by the distant coast: tiny waves ruffled up by the western breeze were speckling the surface with those snowy masses of foam that mariners call "white horses," and the dark shadows of the floating clouds were chasing each other over the sparkling plain, turning the brilliant whiteness of the ships' sails into a dusky grey, as they fleeted by.

Behind us we saw the valley up which we had been toiling; a portion of the town of Ilfracombe embosomed among the hills, the shipping in the harbour, Hillsborough and the other bluff headlands that distinguish this part of the coast receding in succession, until they faded into a dim and untraceable line far up the channel towards Bristol. But prominent among them was one conical mass, attracting notice as well by its superiority of magnitude to all the others, as by the simple majesty of its uninterrupted outline, rising to a peak from the land, and then descending with a similar angle to the sea. We learned that this mountain, which is between eleven and twelve hundred feet above the sea-level, bears the singular name of the Hangman, derived from a romantic incident which legendary tradition has preserved.

Many, many years ago, it is said, a man went out one night and stole a sheep from the flocks, which then, as now, grazed on the slopes of these lofty downs. He had killed it, and was carrying it home on his back, having tied the legs with one rope, which he had passed over his head, and held in his hands. As he was crossing the down he came to one of the low stone walls which form the fences in this part of the country, and being tired he rested his burden for a few minutes on the top of the wall. By some accident, however, the sheep slipped over the wall, and the wretched man, being off his guard, was not quick enough to prevent the rope from catching him by the throat, nor could all his efforts then succeed in relaxing the pressure. He was found in the morning in this position quite dead, the providence of God having ordained that thus suddenly he should meet the felon's doom, and that his ill-gotten booty should itself become his executioner.

As we turned to pursue our journey, another fine example of coast scenery lay before us. The bluff and black promontory known as the Bull was there projecting its abruptly-precipitous head far into the blue sea, and between us and it was the little bay of Lee, a lovely spot, whose full beauty

we could not yet discover. The cliffs on the opposite side, however, covered with small wood, bushes, fern, and ivy nearly to their foot, and enclosing, as if with lofty walls, on-all but the seaward side, little, quiet bathing coves with beaches of white sand, attracted our admiration ; surrounded as they were with a pretty villa embosomed in orchards and surrounded by cultivated fields. A flagstaff crowned one of the peaks that rose above this scene, and far beyond all, on the distant horizon, was stretched the long blue isle of Lundy.

A steep and rocky lane winds down from our elevated position to Lee, where the road runs along the beach at the head of the cove. The tide was already far out, and revealed the weed-covered rocks, intersected by narrow channels, through which the little stream that flows down from the valley, and turns the wheel of a mill, was pursuing its meandering way to the sea, after spreading itself over the sandy beach. Truly this valley is a scene of great loveliness. We saw it to advantage as we mounted the steep romantic road on the farther side towards the villa I have mentioned above, looking back every now and then, and giving expression to exclamations of delight, as the turns of the road, and the rapidly-increasing elevation, brought new points into view, or altered the relative bearings of those already noticed. The bottom of the valley is chiefly occupied by meadows, to whose carpeted surface the late rains had imparted the most brilliant verdure. The hedge-rows are profusely planted with elms and other trees, which, whatever may be thought of their utility in husbandry, do certainly improve the landscape wonderfully, affording the finest contrasts between their dark masses of foliage, and the tender green of the fields, as bright as an emerald in the sunlight, seen in peeps between them. A few farms and villas, embowered in orchards and gardens, constitute the hamlet of Lee, and, being scattered over the bottom and along the slopes, are very picturesque. The valley rises a little inward, and is presently lost to view by bending round to the right, where it is shut in by the steep rounded hill that forms that side. The whole of this hill, from its base to its lofty summit, is covered with wood, while the hill on the opposite side, equally lofty and equally steep, is an open down, varied only by a few scattered clumps of furze.

The road itself was romantic : for awhile we climbed up a path scarped deeply but of the solid rock on one side; out of the crevices of which sprang in profusion the spikes of that curious plant the navelwort, now in seed, and the more imposing; yet somewhat similar spikes of the foxglove, the noblest of British flowers, but now almost out of blossom. Many creeping plants trailed along the walls of rock, and hung down in festoons over their sides, throwing grace and beauty over what would otherwise have been repulsively rugged. In the hedges the compound flowers belonging to the class that botanists term *Syngenesia* were now peculiarly abundant. These are pre-eminently autumn flowers ; and indeed they constitute the greatest part of the gaiety which our hedges present at this season. The majority are yellow,—the sow-thistles, the hawk-weeds, and groundsel ; but some are purple, as the thistles, and bluebottles, and the hemp agrimony, which was growing everywhere in the hedges, in great heads of a nearly lilac tint. With these there were other flowers that a young botanist might take to be of the same class, but which are technically distinct, the knautia and the scabious, handsome cushion-like heads of blossom of a delicate lilac hue, and the sheep's-bit of bright azure-blue. Spikes of the pretty yellow toad-flax, with long-spurred flowers crowded

together, shot up from among the brambles and cornels of the hedge-rows, and the everywhere-abundant honeysuckle diffused a fragrant sweet-ness through the air from its elegant blossoms.

A large portion of the land hereabout is cultivated in corn. The brown breadths of wheat and the yellow bristling barley, now thoroughly ripe, were waving in the breeze—a sight that filled our hearts with gratitude to Him who “crowneth the year with his goodness.” The farmers were all on the alert, cutting and carrying their crops; every hand was employed; it was evident that there was no idling to-day, for this was the first opportunity that had occurred for many days of doing anything effective towards securing the over-ripe crops. Many an anxious eye had been cast out upon the black clouds during the previous week, and many a heart had sunk to see the wheat beaten down by the incessant rain. Some had, indeed, striven to work in spite of the weather, cutting what they could between the showers; but the event proved that it would have been better to trust to God’s providence and to wait for suitable weather. A farmer, who was busy cutting an excellent crop, piously remarked to me that he had observed that however gloomy prospects might now and then look, the same gracious God who made the corn to grow almost always vouchsafed weather fit for gathering it in, if farmers could only wait in patience for it. This beautiful morning caused the tribute of praise to rise from many a grateful heart, anticipating, as indeed it afterwards proved, that this was the beginning of a time of settled weather, which might last long enough to allow the whole harvest to be secured.

(*To be continued.*)

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#### THE SPIDER—AS AN EXAMPLE OF PERSEVERANCE.

In endeavouring to secure the good, and to avoid the evil, which are so largely to be met with in the world, few qualities are of more value than PERSEVERANCE, or steady continuance in one course of action. We find that all the best and most lasting works of man are accomplished by perseverance. By this, the shapeless stones of the quarry are raised into a city of houses and churches; by this the bog and morass are changed into fields of smiling corn; and distant places are united by good roads. It is this that brings us the useful products of distant countries, and that carries abroad to heathen lands the blessings of civilization. “And yet,” says one of our old writers, “if a man was to compare the effect of a single stroke of the pick-axe, or of one impression of the spade, with the general design and last result, he would be overwhelmed by the sense of their disproportion; yet those petty operations, incessantly continued, in time surmount the greatest difficulties,—and mountains are levelled and oceans bounded by the slender force of human beings.”

But what is of more importance to us, as individuals, than the building of cities or the traversing of seas, is that by perseverance good habits are formed and bad ones overcome; and there is no better way of overcoming a bad habit than by cultivating a good one to take its place. Many persons are disposed to begin a good course, but few have courage to persevere. It is easy to say what we will do, but not so easy to use the necessary effort and self-denial. These become irksome and tiresome, and are gradually given up and abandoned.

Meanwhile the persevering are able to overcome difficulties, and to

accomplish ends which would seem impossible to other men. Experience teaches them that difficulty flies before them as they advance; for they are like the traveller who in his journey saw nothing but a mountain wall before him, which seemed to oppose all farther progress, but by persevering in his course, discovered a path before unseen opening among the hills.

If there are times when the most indolent feel the value of perseverance, and wish it were in their power to exercise it, perhaps they may be shamed, if they cannot be won, to the attempt by considering the example of one of the humblest of God's creatures. We have been commanded, "Ask now the beasts, and they shall teach thee; and the fowls of the air, and they shall tell thee." (Job xii. 7.) And there are many beasts and birds capable of giving a useful lesson on perseverance; but on this occasion our example will be taken from a still humbler class of animals—THE SPIDER: a creature usually regarded with dislike, if not with dread, may yet afford a remarkable proof of the power of perseverance in overcoming difficulties. The beautiful webs hung on the foliage in the early summer's morn, dotted with dew, and sparkling in the sun; or the same silken threads, strung by the hand of winter with pearls glittering in the light of day, are not merely beautiful objects indicative of the skill of the creature that could form such exquisite network, but are examples of patient and persevering toil, that may well make the indolent man blush.

If a king once did not disdain to learn a useful lesson of perseverance from a spider, why should we despise a similar instructor? It is related that Robert the Bruce, king of Scotland, deprived of his crown and banished from his country, "was lying, one morning, on his wretched bed, and deliberating with himself whether he had not better resign all thoughts of again attempting to make good his right to the Scottish crown, and dismissing his followers transport himself and his brothers to the Holy Land, and spend the rest of his life in fighting against the Saracens. But then, on the other hand, he thought it would be both criminal and cowardly to give up his attempts to restore freedom to Scotland, while there yet remained the least chance of success.

"While he was divided betwixt these reflections, and doubtful of what he should do, Bruce was looking upward to the roof of the cabin in which he lay, and his eye was attracted by a spider, which, hanging at the end of a long thread of his own spinning was endeavouring, as is the fashion of that creature, to swing himself from one beam in the roof to another, for the purpose of fixing the line on which he meant to stretch his web. The insect made the attempt again and again without success; and, at length, Bruce counted that it had tried to carry its point six times, and been as often unable to do it. It came into his head that he had himself just fought six battles against the English and their allies; and that the poor persevering spider was exactly in the same situation with himself, having made as many trials, and been as often disappointed in what it aimed at. 'Now,' thought Bruce, 'as I have no means of knowing what is best to be done; I will be guided by the luck which shall attend this spider. If the insect shall make another effort to fix its thread, and shall be successful, I will venture a seventh time to try my fortune in Scotland; but if the spider shall fail, I will go to the wars in Palestine, and never return to my native country again.'

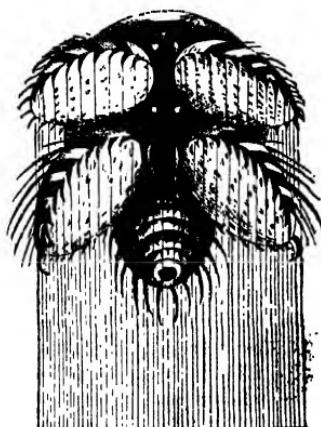
"While Bruce was forming this resolution, the spider made another exertion with all the force it could muster, and fairly succeeded in fastening its thread to the beam which it had so often in vain attempted to reach.

Bruce, seeing the success of the spider, resolved to try his own fortune ; and as he never before gained a victory, so he never afterwards sustained any considerable check or defeat. I have often met with people of the name of Bruce," says the writer of this anecdote,\* " so completely persuaded of the truth of this story, that they would not on any account kill a spider, because it was such an insect which had shown *the example of perseverance*, and given a signal of good luck to their great namesake."

Let us, then, inquire into the history of the spider, which of itself reveals much that is beautiful and interesting, and endeavour to gather lessons of industry and perseverance from its habits and mode of life.

Spiders are sometimes ranked among insects ; but they differ from them in several respects, especially in not being subject to those changes of form and of habit which make insects appear like so many distinct beings in different parts of their lives. There are many different kinds of spiders, having different habits of life and different methods of taking their prey ; but they all show the same art and perseverance in providing for themselves and for their young. The greater number weave curious and beautiful webs, to entangle flies and other small insects. But there are some spiders which never make webs, but either hunt their victims, or lie in ambush for them in holes in the earth, in crevices of walls or trees, or even in the cup of a flower.

The net-weaving spiders are the best known ; therefore we shall first consider what are their working materials and what their working tools.



SPINNERETS OF A SPIDER,  
GREATLY MAGNIFIED.



END OF A SPIDER'S THREAD ATTACHED  
TO A SURFACE, MAGNIFIED.

The thread spun by these spiders is like that produced by the silkworm and other caterpillars, except that it is much finer in quality. It is produced within the body of the animal as a thick gum, and issues out through four or six little swellings on the abdomen : these form the spinning apparatus, and produce the thread somewhat in the manner of rope-spinning. Each spinner contains an immense number of fine tubes ; every one of which consists of two parts, the last being pointed, and from all these points proceed threads of wonderful fineness, which, as soon as they issue out, are immediately united into one thread. The compound threads thus

\* Sir Walter Scott.

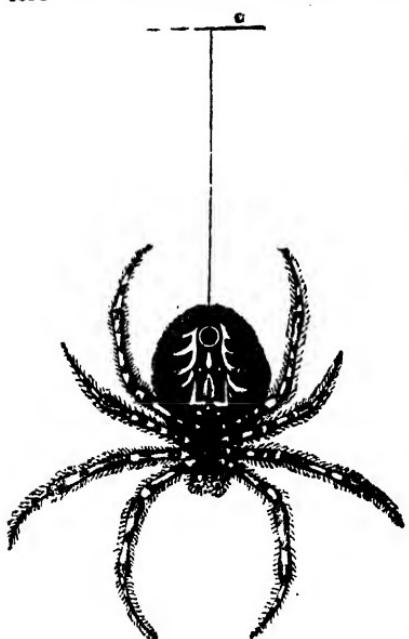
produced by each spinner, when about an inch long, are again united to form the thread used by the spider in making its web. The tubes from which the threads are first produced are not all of the same size, and therefore the threads are not all of the same thickness. But it is a very

wonderful fact, that a spider's thread, even when so fine as to be scarcely visible by us, is not a single line, as we generally suppose, but a rope composed of not less than four thousand strands! And this is true for spiders not larger than a grain of sand, as well as for the largest specimens. Thus the spider makes threads of any desired thickness; and in order to insure their strength, first dries the silk in numerous minute threads, and then spins these threads into one. She is also gifted with the power of closing the spinners at pleasure; and thus the spider's line serves the same useful purpose as the wings of a bird,—for by throwing herself down from a height by her line, she can stop her progress at any point of the descent.

The claws of the spider's feet are of great assistance in weaving the thread, being furnished in many species on the under surface with teeth like a comb; with this instrument she usually guides, or keeps

GARDEN SPIDER SUSPENDED BY A THREAD FROM THE SPINNERET.

separated into two or more, the line from behind. The foot is also furnished with a third claw, upon which the spider, in ascending her line, winds up into a ball all the superfluous silk. This remarkable structure was evidently



CLAWED FOOT OF THE SPIDER.

known to Solomon, the wisest of kings, when he wrote, "The spider taketh hold with her hands, and is in kings' palaces." (Prov. xxx. 28.) But there is also another provision, by which the spider is able to walk upon glass, or other slippery surfaces, without danger of falling. The under surface of the foot, in a great number of spiders, is furnished with a thick brush formed of slender bristles, fringed on each side with exceedingly fine hairs. • This was first seen in the bird-spider, and may be noticed by the aid of a microscope in any of the common spiders that climb our windows.

(To be continued.)

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A VISIT TO AUSTRALIA AND ITS GOLD REGIONS (*continued*).



NATIVES OF AUSTRALIA.

THE city of Adelaide, on entering it from the bridge over the Torrens, presents rather an imposing appearance, and still more impresses a Londoner with the idea of "home." The numberless vehicles of all descriptions, drays with sturdy horses, tradesmen's carts, omnibuses, stage-coaches, conveyance carts, barouches, and gigs, with the busy throng of foot-passengers, the fine shops, many of which would be no disgrace to Regent-street, make it difficult for an Englishman to believe that he is many thousand miles away from his own country. The city is a large place, not yet nearly built over; the majority of houses existing at the present time were built for persons of small means, mainly constructed of nine-inch brick-work, with roofs of shingles from Van Diemen's Land, in many instances

so neatly put together as to render it impossible at a short distance to distinguish them from slates. Besides these humbler dwellings, there are many of a higher character; such as the Bank of Australia, which is a magnificent building; and the new Post-office, which is a St. Martin's-le-Grand on a smaller scale.

In no other of the Australian possessions yet occupied are there so many capabilities for profitable occupation. There are large tracts of country bearing excellent crops of rich grass, and for miles destitute of a single tree, which afford the finest pasturage for hundreds of thousands of sheep and cattle. There are immense forests of serviceable trees, many of them rising to the height of forty or fifty feet from the ground to the lowest branch, and affording employment for a vast number of splitters, sawyers, fencers, hurdle-makers, carters, carpenters, charcoal-burners, and persons who supply fuel. There are also considerable tracts of the ~~most~~ arable land in the world, capable of growing, in the utmost perfection, wheat, barley, oats, maize, hops, and all kinds of fruits and vegetables; and it is said that the finest wheat ever exhibited in the London Corn Market was exported from this colony. There are many profitable whale-fisheries upon the coast, and the mineral districts of the colony are unrivalled for their richness. There are mines of lead, tin, copper, silver, emery, plumbago, and iron; and although a productive gold "digging" has yet to be discovered, gold has certainly been found; and there is little doubt, considering the numbers who are tempted to explore the country by the promise of 1000*l.* reward, that the country will not long remain without the attraction of a gold mine. There are stone quarries, supplying excellent material in the greatest abundance; and slate quarries, not of blue slate only, but of a peculiar kind of white slate-stone, which splits off in large slabs, and is as soft as the blue slate, and can therefore be easily worked. There is also a blue marble, which works well, and is of great utility; and limestone fit for burning is found in almost every district. The discovery of coal only is requisite to make the list as complete as it is valuable.

It is mainly to the mineral riches ~~of~~ the colony that South Australia owes its prosperity and importance. It was in the year 1844 that the existence of mineral wealth began to attract universal attention. "In 1844," says Mr. Wilkinson, "a loaded dray coming down a steep hill in sight of the town, which was distant about three miles, was obliged to have a large tree dragging behind it to prevent its rushing upon the team of bullocks. This tree, coming into violent contact with a rock or stone at the side of the road, shattered off some portions, and revealed to sight a bright silvery substance, which, on being shown to people acquainted with minerals, was pronounced to be lead-ore, or galena. As if a spark of fire had fallen amongst gunpowder, every one was on the *qui vive*, and the excitement was intense. The specimens were stared at, and examined, and tested in every way. Masses of people crowded about the spot from which they had been severed; and, armed with chisels, axes, hammers, everything, in fact, that would break the stone, they all set to work. Never, perhaps, was a hill so knocked about. Worthless stones were slyly pocketed and taken home for secret examination. The utmost caution was observed by those who had a bit of stone discoloured by damp or exposure to the atmosphere. All holders of land-orders looked anxiously at their number, as it was found that the possessor of the oldest order gained the prize. At one time No. 307 was sure to win, then No. 274 turned up; he could sell

his chance for a very large sum, but, like a clever man he stuck to his chance—and lost ; for No. 180 was now found ; and so it went on, until the land was delivered up to the fortunate possessor of the proper order. Then the sinking a shaft was commenced, and after all the fuss the mine was found to be almost valueless. It had, however, the effect of setting every one to work hunting about among rocks and stones, over hill and dale, amongst the watercourses, and plains, when it was found that the whole country, north, south, and west, was extensively scattered over with valuable minerals. Copper was found in large quantities and in every direction ; every person carried his pocketful of specimens ; no other subject was talked of in all societies, and the whole population seemed to be in danger of running as mad about minerals as they had been before about the town lands."

The first important mine discovered was that called the Kapunda ; but not long after, a union of all parties in Adelaide caused a special survey of 20,000 acres to be made, which almost drained the colony of money to pay the requisite sum of 20,000*l.* in due time. The survey having been completed, the parties agreed to divide the land into two portions, the officials and gentlemen taking one ten thousand acres, and the tradesmen the other. A toss-up decided the question ; to the tradesmen fell the half called Burra Burra, to the officials the other, named Princess Royal. The former has a world-wide reputation ; whilst the name of the other is unknown except in the immediate locality. The shares of the one have sold for as much as fifty times the original price, while those of the other are at about 75 per cent. discount.

The mining operations at Burra Burra were commenced in September 1845, and the ore was found cropping out of the ground in large masses of many thousand tons' weight ; and so rich, that much of it yields an average of 65 per cent. pure copper ; and it is rather singular that a squatter, who had been living and folding his sheep over the ground, never noticed its existence. In the first year 6,359 tons were raised ; and 10,745 in the second. In May 1847, the first dividend was paid—50 per cent. ; followed by another of the same amount in the ensuing month : since which time the progress of the mines has been one of constantly-increasing prosperity, until the discovery of the gold regions in the adjacent colony of Victoria, drawing away the miners, has left the proprietors without labourers. This has, up to the latest news, reduced the dividends, and also the price of shares.

The following description of the Burra Burra appeared in the Adelaide papers :—

" Proceeding from Mr. Wren's hotel we passed through a gorge of the northern hill, and in a few minutes found ourselves in view of the 'eighth wonder of the world.' The Burra mines are chiefly in a basin about fifty acres in extent, nearly surrounded with low hills lying confusedly around ; confused and irregular hills are indeed the prevailing feature of this district. The workings, however, are comprised in the space of little more than six acres ; but this space on a working day is a most animated and astonishing scene. The first thing that strikes the eye are immense piles of earth intersected with vast heaps of ore laid out in a similar style to the broken stones on a macadamized road. Over the heaps are placed five or six great horse-whims, some of which ply night and day. One, in particular, at Kingston Shaft, never rests except on Sundays. During the night it raises ore, and during the day it raises water for cleaning it. No less than

thirty shafts have been sunk, most of them to the water, and of course the operations downwards must be suspended till a steam-engine, which has been ordered, arrives.\* The deepest shaft is the Kingston, which is sunk thirty-five fathoms below the surface, and which contains ten fathoms of water. Between the shafts are the sheds for separating and washing the ore. The ore is washed on a very simple principle. A lever and rod are suspended above troughs filled with water, and a sieve containing the ore is attached to the rod. The cleaner, by jerking the sieve up and down in the water, causes the ore—the heavier body—to sink, and the refuse on the surface is then taken off. It was stated by good authority that there was sufficient ore then on the surface, independent of what was on the road, at the port, on shipboard, or in England, to pay the shareholders 200 per cent. (25,000*l.*) every month for nearly twelve months. The average quantity taken away during the last few weeks has been nearly 100 tons per day; and, as the quantity brought from the mine to the surface is upwards of 80 tons daily, very little impression is made on the accumulations at the mine. We will now attempt to relate our labours in threading the mazes of the vast *souterrain*. We can assure those who read this, that it is not every one who can do it. The man who attempts such a great enterprise should be young and active, should be sound and lithe in limb, and should possess good lungs, and no little perseverance. Above all he should not be stout, as some of the holes are so narrow that not more than thirteen stone can squeeze through, unless it belongs to a practical miner. You descend and find it only twenty fathoms; you follow on through galleries dotted with copper, down little shafts, and into great vaults and chambers, and caverns, like Vulcan's forge, where men are seen with candles in their hats or stuck on the rocks, hewing away at the most splendid copper ores that eyes ever beheld. Ever and anon we came to beautiful little malachite arbours, which the miners called their gardens, every side being of a bright emerald green, and forming delightful spots in which to rest. A few of the miners grumbled because they had only 1*s.* 3*d.* per pound of tribute (from this sum the tribute ranges to 2*s.* 6*d.*), and protested that they did not make quite 10*l.* per month; but an old Cornish and Columbian captain, unconnected with the miners, who was present, told us that the miners were habitual grumblers; and we learned afterwards that some of them made as high as 40*l.* or 50*l.* per month, and that the superintendent sends as much as 200*l.* or 300*l.* in a week to Adelaide to invest for the fortunate and industrious. We must, however, mention, for the honour of the men, that the grumblers are a small exception. In some of the vast caverns thirty, forty, and fifty feet wide, when surrounded on every side with malachite, red oxide, and green and blue carbonates mingled in rich confusion, the miners asked our experienced friend if he had ever seen or heard of anything like the Burra, and were evidently not in the least surprised at his energetic negative. After four or five hours' hard travel through this labyrinth we reascended, leaving still a very large portion of the mine unexamined."

The Burra Burra mine, however, though the most valuable, is not the only one which is in working order. There are several others, as the Montacute, the Murkurta, the Yattagolinga, which will all at one time or other become of great value to the colony. In one of these mines, a short

\* The *South Australian Register*, for July 1851, announced, under the head of "Arrival of the Monster Engine," that it had reached the colony in the ship "Joseph Weir," which was principally freighted with the several parts of the engine, and other machinery for the mine.

time after the section on which it was situated had been purchased, while sinking a shaft in search of copper, one of the men suddenly broke in upon a vein of metal of a bright yellow colour, totally different in appearance from copper, and which was imbedded in a dark chocolate-coloured earth. The vein was about two inches wide, yielding metal in the proportion of about a quarter of an ounce to an inch, and showing a tendency to enlarge in size. An analysis of this metal proved it to be gold ; and although the specimen tested was simply separated from the matrix by the fingers, but not washed or otherwise purified, it yielded ninety-four per cent. of pure gold. This was in the early part of 1846—more than six years ago ; but, although the product of this discovery has not been of much practical importance, it had the effect of demonstrating that South Australia, in communion with the sister colonies, possesses a share of auriferous treasures.

The state of affairs at the present time in Adelaide, in consequence of the abundance of gold found in the neighbouring colony of Victoria, is certainly by no means pleasant. The following extract, from the circular of Messrs. J. Stebbings & Co., of Adelaide, dated February 2nd of this year, gives us a vivid impression of the present state of the colony, while it also shadows forth hopes of greater prosperity for the future :—

"The excitement caused by the gold-finding among the inhabitants of this colony has been intense, nearly the whole of our labouring population having left, and those who have not yet done so, intend leaving as soon as possible. The principal part of our male adult population consisted of about 17,000 from twenty-one to forty-five years of age ; and it is computed that out of this number 10,000 have left the colony within the last few months. There were from twelve to fifteen vessels regularly laid on at Port Adelaide for passengers to the Victoria diggings, and from 1,000 to 1,500 souls were leaving the colony weekly. But few females have hitherto left, though they are now beginning to leave. Such a flood of emigration from this place is producing the most disastrous results. The average drain of specie from each of our three local banks, exclusive of the Savings' Bank, is just now from 40,000*l.* to 50,000*l.* weekly. Trade is completely stagnated ; the stores of the port are filled with wool, copper, tallow, &c., all waiting for shipment. Owing to the scarcity of labour, it is with the utmost difficulty anything can be put on board ship. Seamen are obtaining "from 10*l.* to 15*l.* per month for the run to London ; and many decline going to England on any terms. Freights are, in consequence, locking up. Should this state of things continue much longer, it will be questionable whether any ship can leave our harbour for England at all. Landed and household property have become depreciated at least 75 per cent. on their former value. Our mining and smelting interests are suffering severely ; most of the men from the works of the Patent Copper Company and the Burra mines are leaving for the diggings. Burra shares have fallen from their maximum point of 225*l.* to 50*l.* per share, and will decline still further. Fortunately, out of the 15,000 bales of wool which we annually ship to England, about 12,000 of this season's clip have already gone, leaving only 3,000 bales or so to be shipped ; and it will be no easy matter to get the remainder away."

"The next wool season is likely to be a trying one to the flock-owners, as their shepherds are all leaving ; and we fear there will be a great falling off in the export of this staple from these colonies during the ensuing season. When we consider that Australia furnishes half of the

entire quantity of wool imported into Great Britain, this is of serious consequence, and must influence the home market.

"Although gold in large quantities find its way here from Victoria, it nearly all goes back again, owing to the determination of our banks not to allow purchasers of gold to draw against shipments of this article. The consequence is, that all the diggers who have returned to the colony, however much inclined to remain here and invest their earnings, are soon obliged to leave us again when they find that their gold-dust and nuggets have no exchangeable value with us. This has produced the most baneful effects on business. Our merchants and tradesmen have been petitioning and remonstrating with the Governor, praying to have some kind of an assay office established, where an exchangeable value might be given to the gold, by converting it into ingots of a certain value, which would circulate as other coin. Although this petition met with a cool reception, it is now all but certain that it will be granted in some modified form; nothing else could save this colony from the verge of utter ruin—for a length of time at least—though eventually we have little to fear but that we shall find South Australia in a better position than ever, owing to the many advantages she has over the other colonies in her mines and agricultural productions.

"All practical geologists are struck with the similarity of our auriferous indications to those of Bathurst and Mount Alexander. Probably at some future period gold will be found here in equal abundance.

"Quotations for all kinds of merchandize are nominal, with nothing doing but for actual requirements, the greater part of our usual imports being now unsaleable; and nearly all shipments coming here are transhipped to Melbourne. Although whilst penning this, an enactment has been passed by our Legislative Council declaring gold a legal tender in this province, at the rate of seventy-one shillings an ounce, still we cannot expect any improvement in business for the next twelve months at least. Extensive failures are of almost daily occurrence under the existing and unforeseen pressure of the times. Our banks are determined to act liberally to all their customers. Merchants and tradesmen are following the same rule towards each other. It is anticipated that this mutual forbearance between man and man will after some lapse of time restore confidence, when every branch of trade will resume its wonted tone of health and vigour, and much of the wealth produced by the gold diggings will find its way for investment to this colony, where every luxury and necessary of life may be produced and enjoyed in peace.

"After the present crisis is over, and confidence has been again restored, South Australia will experience a flow of wealth and prosperity unexampled either in present or past times by any colony acknowledging the sway of the British Empire."

#### OUR NATIVE SONGSTERS.

##### NEST-BUILDING—INSTINCT.

THERE is no season of the year which seems so full of life and beauty as the months of April and May. The lambs lie like patches of snow upon the meadow, now green with richest grass, and bright with its sprinkled daisies and buttercups. In the wood where the soft winds answer to the running brooks, the blue-bells are hanging, and the wind-flowers with their white and pink petals are all unharmed by the breeze. An odour of

primroses and violets comes from the banks, and leaves quiver and dance in the sunshine, and cast a chequered shadow on the pathway. There is a loud concert of singing among the green boughs, and every day it becomes more varied. Not only are our resident birds in full song, but those visitants which wing their way across the ocean to build their houses and rear their young in our woods, will all have reached us by the middle of May, and during that and the two following months all the minstrels of wood and glen, of mountain and river-side,—all may be heard and seen. It is the season of incubation, the period when the songs are sweetest; and when this is over many migratory birds will leave, and those which remain will be mostly silent, till the robin and wren begin their autumnal songs among the yellow leaves. It is not till late in May that the soft and plaintive cooing of the turtle-dove announces its arrival, and when its silver wings flit along through the trees, we may hear, too, the note of the fly-catcher, which is one of our latest visitors. Long since, before the trees had put forth a spray of leaves to meet the chilling winds of March, and when the sloe had a white flower here and there upon its branches, and the willow-tree bore already its balls of gold, the chaff-chaff had come to join its notes with those of our thrush and blackbird, when a bright day invited them to song. Then the whinchat was soon heard as its abrupt notes issued from the furze-clad common. Early in April came the redstart, and then followed swallows and martins, and we might say in the words of our earliest extant ballad—

“Summer is come in,  
Loud sings the cuckoo.”

There is life everywhere, and insects glitter in the sunbeam, and pursue their destined summer-work :—

“Bird, bee, and butterfly—the favourite three  
That meet us ever on our summer path!  
And what with all her forms and hues divine,  
Would summer be without them? Though the skies  
Were blue, and blue the streams, and fresh the fields,  
And beautiful as now the waving woods,  
And exquisite the flowers; and though the sun  
Beam'd from his cloudless throne from day to day,  
And, with the breeze and shower, more loveliness  
Shed o'er this lovely world; yet all would want  
A charm, if those sweet denizens of earth  
And air, made not the great creation teem  
With beauty, grace, and motion! Who would bless  
The landscape, if upon his morning walk  
He greeted not the feathery nations, perch'd  
For love or song, amid the dancing leaves;  
Or wantoning in flight from bough to bough,  
From field to field? Ah! who would bless thee, June,  
If silent, songless, were the groves,—unheard  
The lark in heaven?”

And now the dwellers in the country can but remark how busy are the birds at nest-building. Away they fly with the scrap of wool from the sheepfold, or the feather from the farm-yard, or the moss from the bank, or the twig or lichen from the tree. In most cases, the labour of nest-building devolves on the female bird, and when her companion aids her, it is simply by carrying the moss, or wool, or grass, to the appointed spot, while many birds fail in even rendering this assistance. The hen-bird collects her materials, and weaving a framework of dried stems and twigs,

she by various movements of her body moulds the other substances to their destined form. There are birds which, like the cuckoo, make no nests, but leave to others the care of providing a dwelling for their little ones : but many nests are framed with exquisite skill, and so exactly fitted for the circumstances in which they are to be placed, that we may say with Hurdis, of one of them, "It wins my admiration." Great indeed is the beauty of some of these structures, especially of those of the finches. That of the chaffinch or the goldfinch, of hemispherical shape, and formed of a compact framework, with its warm neat lining, is made with great skill and taste, and would lead one to infer that its builder had a love for the beautiful. The nest of the noisy magpie suggests the idea that its owner had an eye to the dangers which awaited it, and so made a house adapted for defence from its enemies, and guarded so well with thorny branches, that one might as well attempt to seize a furze-bush hastily, as to grasp at it. The wren has the aperture of its nest at the side next to the light : and the blackbird building so early in spring, not only seeks the shelter of the evergreen boughs, but makes a firm wall to its nest, impervious to wind and rain. The swallow knows how to glue its cradle in the angle of the window or chimney, or beneath the eaves of the house ; and constructs a solid dwelling of clay, thickened with straws and feathers, and well lined with a downy quilt. Many of the birds of other lands are even more ingenious architects than our native songsters. Thus the pretty Penduline Titmouse of the south and east of Europe, frames a nest of remarkable elegance, woven of down which it gathers from the catkin of the willow or poplar, or from the ball of the dandelion or the thistle-tuft. Of these it manufactures a kind of felt or cloth, which it strengthens by the fibres of plants, while it lines its nest with a thick cushion of the down in its natural state, making a ledge over the aperture of the nest, which it can close at will, and fastening the structure to a branch suspended over a running stream, so that the rats or snakes which frequent the waters, cannot reach it. There are birds of the East which build chambers in their nests, and others which ingeniously sew leaves together for a covering to their little homes ; others are perfect basket-makers, and weave so well, that the birds have received the name of those artisans, whose fabrics their nests resemble.

The nests of our song-birds vary sometimes a little, in consequence of the situation or the materials which are to be found in the neighbourhood in which they are built; yet from one generation to another, they are framed with so much regularity that a practical ornithologist can tell at once, if he sees an empty nest, what species of bird was the architect. As James Montgomery has said :—

"The nightingale that dwelt in Adam's bower,  
 And pour'd his stream of music through his dreams ;  
 The soaring lark, that led the eye of Eve  
 Into the clouds, her thoughts into the heaven  
 Of heavens, where lark nor eye can penetrate ;  
 The dove that perch'd upon the tree of life,  
 And made her bed upon its thickest leaves :  
 All the wing'd habitants of Paradise,  
 Whose songs once mingled with the songs of angels,  
 Wove their first nests as curiously and well  
 As the wood minstrels in our evil day,  
 After the labours of six thousand years,  
 In which their ancestors have fail'd to add,

To alter, or diminish anything,  
In that of which Love only knows the secret,  
And teaches every mother for herself,  
Without the power to impart it to her offspring."

That it is instinct, and not teaching which enables the bird to build its nest, we know from the fact that birds reared in cages where they have never seen the usual dwellings of their species, will, as far as materials and circumstances admit, form a nest like that of their kind. Some slight variations, according to necessity, may be seen; yet, as Mr. Knapp has observed, there is little deviation. "Birds," says this writer, "which build early in spring, seem to require warmth and shelter for their young. Thus the blackbird and thrush line their nests with a plaster of loam, perfectly excluding by these cottage-like walls, the keen icy gales of our opening ~~years~~; yet if these are destroyed, they will build one in later summer, exactly like it, at a time when coolness would seem desirable."

It is truly wonderful and interesting to remark how the parental instinct works in the heart of the bird, altogether changing for a time its character and habits. Fitted for soaring, and restless and volatile beyond any other living creature, yet the hen-bird will sit hour after hour, and day after day, upon her eggs, and in some cases her companion will share in this domestic duty; while at all times the mother-bird must depend on the care of her mate for her food. The constant labour of feeding the nestlings becomes a most arduous one, owing to the great quantity which young birds consume; and as it chiefly consists at that time of the soft bodies of insects, both birds must search actively and labour constantly to afford the supply. Colonel Montagu, who watched the manner in which a pair of gold-crests fed their young, has recorded several interesting facts on this subject. He placed the nest, when the young were about six days old, in a basket in his study. The parent birds came to them; the male bird not having courage to enter into the room by the window, while the female braved all dangers, and at length would feed her young while this gentleman held the nest in his hand. The male bird always accompanied his mate, while she flew backwards and forwards, but never ventured beyond the window frame, and after a time never brought food in his bill. "At first," says this writer, "there were ten young in the nest, but probably for want of the male's assistance in procuring food, two died. The visits of the female were generally repeated in the space of a minute and a half or two minutes, or upon an average thirty-six times in an hour, and this continued full sixteen hours in a day, and if equally divided between the eight young ones, each would receive seventy-two feeds in the day, the whole amounting to five hundred and seventy-six. From examination of the food, which by accident now and then dropped into the nest, I judged from those weighed, that each feed was a quarter of a grain, upon an average; so that each young one was supplied with eighteen grains' weight in a day, and as the young ones weighed about seventy-seven grains at the time they began to perch, they consumed nearly their weight of food in four days' time at that period. This extraordinary consumption seems absolutely requisite in animals of such rapid growth. The old birds of this species weigh from eighty to ninety grains. I could always perceive by the animation of the young brood when the old one was coming; probably some low note indicated her approach, and in an instant every mouth was open to receive the insect morsel. But there appeared no regularity in the supply given by the parent bird: sometimes the same was

fed two or three times successively, and I generally observed that the strongest got most, being able to reach farthest, the old one delivering it to the mouth nearest to her."

Not only is the patience of the mother-bird required during the time of sitting on the eggs, but when the nestlings are hatched they require the warmth of her sheltering wings, both by day and night, so that for several days after she is unable to quit them lest they should die of cold. And now, too, the timid bird becomes courageous, and will brave any danger to protect or feed the nestlings. Instances are recorded in which the lark, usually so easily frightened, has fluttered before the fowler to call his attention away from her younglings; and many birds, like the blue titmouse, will follow the person who seizes the young, and amid wild screams will rush at the hand which bears away the nest. Whether or not the parent birds are able to give any instruction to their young, as to their mode of learning to fly, is doubted by some; but this is certain, that they watch over them, warn them of dangers, and never cease to aid and feed them, till their feathered wings enable them to provide for themselves.

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#### SEA-SIDE PLEASURES.—No. III. (*continued.*)

A STRANGER walking through a Devonshire lane cannot fail to be struck with the curious wells that occur at every turn. The scarcity of running water makes every spring valuable, and wherever one is found it is carefully enclosed in a little house of its own, walls of loose stones being built around it on three sides, and covered with a roof. Various degrees of care and skill are of course bestowed on these edifices; often they are very rude, and resemble little grottoes; but sometimes they are comparatively spacious, the bottom deep and paved, and filled with pure water of crystal clearness, with steps for the children to descend and fill their pitchers, and with the entrance protected by a low slab. Such an one I observed at a farm called Houseworth, as we proceeded on our way; a regular little house with "bungalow" roof, built not as usual in the hedge, or road-side wall, but in the midst of an open space in the road itself, and hence a conspicuous object to the passenger. It is very refreshing to peep into one of these grottoes on a hot summer's day; the face is immediately conscious of the grateful coolness, and the eye gazes with pleasure on the elegant ferns that droop in curves from the walls, and the liverwort that spreads in a compact coat of dark glossy green over the interior, nourished into great luxuriance by the congenial darkness and moisture.

And so, through farms and fields, opening many gates in our course, we came to the ancient village of Morte or Morthoe, a little obscure place, almost at the end of the world, being built close to the corner where the coast abruptly bends to the southward. But before entering the village I wished to see Rockham Bay, a narrow path to which leads off from the main road. Alighting from my humble steed, therefore, I proceeded about a mile, through fields, by a winding and not particularly interesting foot-path, till I suddenly descended into the romantic bay.

It is a little cove, wild and silent, no trace of the vicinity of man being perceptible. Cliffs of hard blue slate surround it on three sides, and the ground itself, the floor of the enclosure, is formed of the same slate, which, though uneven, has been rubbed smooth by the action of the waves. A coating of sand and shingle fills the hollows, but everywhere the slate crops

out, and runs in bristling ridges far away into the sea, where it is covered with a rude drapery of yellow sea-weed.

Having walked round the foot of the cliffs, and peeped into some of the narrow caves with which they are perforated, thinking of Charlotte Smith's lines, and responding to them,—

"Tis pleasant to wander along on the sand,

Beneath the high cliff that is hollow'd in caves,"—

I strolled down to the water's edge. In one place I found a large bed of minute pebbles, most of them of white quartz, beautifully smooth, regular, and pure, looking exactly as if a cart-load of comfits and sugar-plums had been shovelled out there, or as if all the humming-birds' eggs in South America had been collected into one spot. Then I explored the rocks, and examined the tide-pools, which I should take to be peculiarly favourable for a naturalist's researches at extreme low water; but the tide was not now sufficiently out, and my time scarcely allowed me to do more than take a hasty glance at the place. Yet I did not leave it without obtaining a zoophyte of curious structure and beautiful form, which I will describe.

As I peeped about among the pools that lay clear and calm in the hollows of the rocks, my eye was attracted by a tuft of that feathery sea-weed, *Ptilota sericea*. It is not uncommon, fringing the perpendicular sides of the ragged ledges and outcropping strata, near the lowest tide-

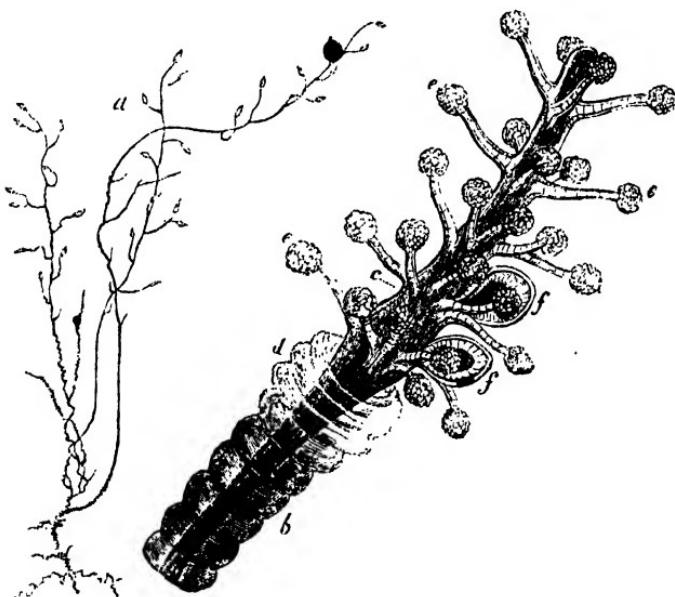


Fig. 1. *Coryne ramosa*. a, natural size; b, a polype magnified; c, the head; d, the tube; e, the tentacles; f, the egg-capsules.

mark, wherever the form of the succeeding ledge allows the water to lie in a long, narrow, and sharp-bottomed pool. The colour of this sea-weed is not particularly attractive, for it is of a dull brownish red, and the fronds have frequently a ragged appearance; but if it be carefully spread out in a saucer of sea-water and examined, there will always be some branches to

be found of a livelier hue than the rest, and these will best show the exquisite plumose structure. Each branchlet resembles a tiny feather regularly pinnated; and if examined in a microscope of rather high power, each of the ultimate nerves of the pinnation, as well as the vanes or pinnules themselves, are seen to be composed of a single row of red transparent cells, of an oblong cylindrical form, sometimes swollen in the middle, attached to each other end by end, looking something like the backbone of a fish, when all the ribs and spines are detached.

But what attracted me on this tuft of sea-weed, whose soft feathery branches were hanging from the sides of the rock into the calm and dark pool, was a slender branching filament that was evidently a parasite. I separated the *Ptilota* with as much of the base as I could, and put it into a broad-mouthed phial of clean water. I could not wait till I got home, but looked out for a dry smooth stone on which to sit, pulled out my pocket lens, and looked at it. To my gratification it was a polype that I had several times vainly wished to find. I had no difficulty in recognising its similitude to Mrs. Johnston's beautiful figure of *Coryne pusilla* in Brit. Zool. pl. ii. (2nd edit.), though I think it rather belongs to the species distinguished as *ramosa*.

It was not, however, until I could institute a closer examination of it at home, that I fully apprehended its curious structure or its elegant beauty; and this, by the aid of a sketch that I immediately made of its microscopic appearance, I will endeavour to convey to you.

The animal, as seen by the naked eye, looks like a very minute branching plant (fig. 1, *a*). It is altogether about as thick as fine sewing-cotton; an irregularly winding thread creeps along the frond of the sea-weed, clinging firmly to it as it goes, yet not so tenaciously but that it may be pulled away without dividing. This creeping root sends off frequent rootlets, which, crossing each other, appear to anastomose, making a sort of network of a few oblong areas. Free stalks shoot up here and there from the creeping stem, one of which in my specimen is upwards of three inches in length; they show a very slight disposition to ramification, but send forth, at short intervals, the polype-branchlets, irregularly on all sides. A few of these are compound, one branchlet giving origin to another from its side. The creeping fibre, the stalk, and the branchlets are seen under the microscope to be tubular, and the two latter are marked throughout their course with close-set rings, or false joints, apparently produced by the annular infolding of a small portion of the integument (fig. 1, *b*). The tube is of a yellowish-brown colour, sufficiently translucent to reveal a core or central axis of flesh, running along its centre, and sending off branches into the polype-branchlets, from the open tips of which the flesh emerges in the form of a thickened oblong head (*c*), somewhat club-shaped, whence the name *Coryne* (from κορύνη, a club), which has been assigned to this genus by naturalists. The tube, or sheath, becomes membranous, or I think gelatinous (like that of some *Rotifera*), at its margin, the ultimate three or four rings being evidently soft, scarcely consistent, viscid (entangling extraneous matters), almost colourless, of undefined outline, and larger than the rest (*d*). The polype-flesh, which is very slender within the tube, enlarges rapidly as it emerges. The club-shaped head of the polype is studded with short tentacles (*e*), of curious and beautiful structure. They vary much in number on each polype, but the full complement appears to be from twenty-five to thirty; they are arranged in somewhat of a whorled manner, in four or five whorls, which are how-

ever (especially the lower ones), often irregular, and scarcely distinct. Four tentacles usually constitute the final whorl; about six the next, the others respectively contain seven or eight, and ten or twelve. The tentacles spring from the axis with a graceful curve; they are rather thick and short, when contracted, but slender when elongated, nearly equal in diameter, except at the termination, when each is furnished with a globose head. This head (see fig. 2) is studded with minute tubercles on every part, which reflect the light, and which, viewed by transmitted light, are seen to be the terminations of numerous oval cells or follicles set in a divergent manner around the centre. Each tubercle is tipped with a minute bristle. The neck or body of the tentacle is perfectly transparent, pellucid-whitish or nearly colourless, and appears to be a tube with thin walls, slightly hairy on the surface, but containing a colourless thickish axis, freely permeating its centre, marked with delicate parallel rings. The globose knobs at the tips of the tentacles remind me of the unexpanded blossoms of an *Acacia*: they are generally tinged with pale red, and in some polypes, especially terminal ones, they are of a fine rose-colour, and are very pretty.

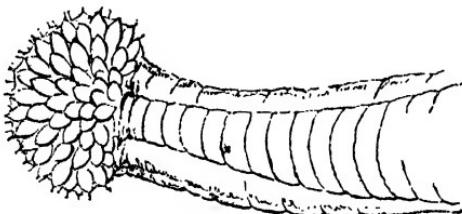


Fig. 2. A tentacle much magnified.

The tentacles are endowed with the power of free motion, and they frequently throw themselves to and fro with considerable energy: when perfectly at ease they are carried projecting nearly at right angles from the polype, but are more commonly curved up towards it. The whole polype can be also tossed from side to side at pleasure. The tentacles are contractile and extensible to some extent; for if the animal be taken out of water for an instant, and again replaced, these organs are found to be shrunk up to less than half of their former length. In a few minutes they recover their extension.

Some of the polype heads are furnished with organs of another kind. Among the tentacles, chiefly of the lower whorls, are seen one or two oval bodies (fig. 1, *f*), about twice or thrice as large as a tentacle-head, which are attached by short foot-stalks to the polype body. They are composed of a clear jelly-like granular mass, with an oval dark nucleus in the centre, connected with the attachment: the nucleus is of an orange or yellow hue, and is coarsely granulated. In some that I kept, this dark nucleus became larger, until it almost filled the interior; but the death of the animals prevented my seeing the full development. These are egg-capsules, for I have since had a specimen which produced a great number (between twenty and thirty) of soft clear eggs, from each capsule; but I have not succeeded in breeding the polype from the egg.

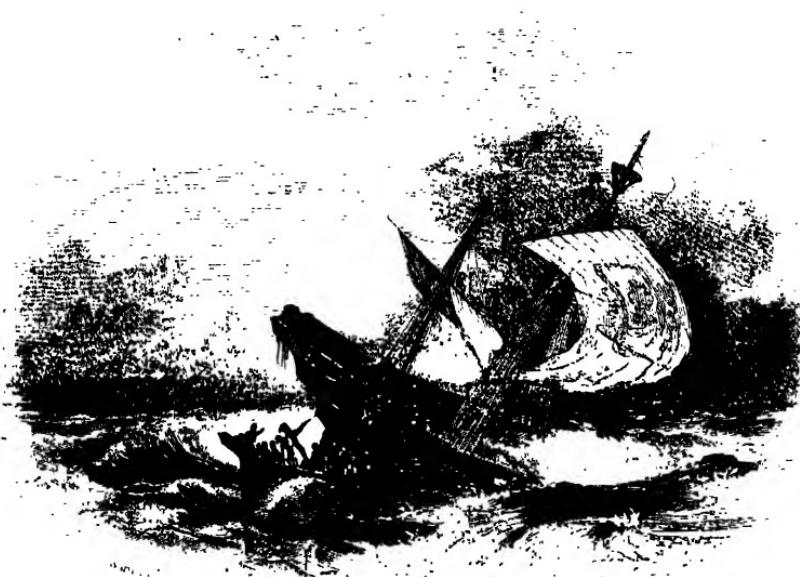
In other circumstances, however, the *Coryne* is said to produce a very different offspring, which is neither an egg nor a representation of itself, 'but a little active swimming creature, exactly resembling an animal of

another class, in fact, a tiny *Medusa*, or sea-blubber! The phenomena connected with so remarkable a fact are not thoroughly investigated; but they are among the most interesting and the most astounding of those that have occupied the attention of modern naturalists. Thus far it seems to be incontrovertibly proved, that some polypes, of which the *Coryne* is one, produce at one time young which resemble *Medusæ*, and that these produce young which are like the original polypes; and thus the races are continued in regular alternation. Any particular individual bears no resemblance to its mother or its child, but is exactly like its grandmother and its grandchild; while its mother, its child, and its great-grandchild are alike among themselves.

(*To be continued.*)

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### THE WHITE SHIP.



I TOLD you, in a former story, that William the Conqueror had three sons, the youngest of whom was Henry, afterwards Henry the First of England. This king had only one son, named William. You may suppose he was very fond of him, and as he intended to leave the crown to him, he had him carefully instructed in everything thought necessary to make a good and wise king. Prince William was very brave, and his father was so proud of him he thought he never could do enough to secure his right to the thrones of Normandy and England, and to make him rich and powerful. All his hopes were centred in him; he was his pride, his joy, his all! When the young prince was about eighteen years old, his father took him over to France, that the barons of Normandy might pay homage to him as their future king. Here he was feasted, and courted, and had so much honour paid him, he thought it a fine thing to be a prince, and looked forward with joy to the time when he should be a king. Alas! that time never came. After staying some months in Normandy, King

Henry thought it prudent to return to England. He accordingly gave orders for all to be ready to embark on a certain day. On that morning all was commotion in the little town of Harfleur. The people were hurrying down to the beach to see the fleet set sail for England, and to wish it a prosperous voyage. Men, women, and children were hastening to one point, but, though the vessels were all ready for sea, yet there was no sign of their immediate departure; and the crowd anxiously turned their eyes from the ships, to watch the roads by which the royal party were expected to approach. For some time they watched in vain; but, at length, a gay and gallant train of nobles, mounted on prancing steeds, with banners flying and music playing, gave notice of the coming of England's king.

"Ah! there he is!" exclaimed one of the gazers; "here he comes! you may know him by his height, and the nodding plume in his helmet; see, he is on a white horse, with silver trappings; and how kindly and affably he speaks to all those near him, and how handsome he looks! Oh! he is a noble king!"

"Truly he is!" replied a neighbour; "a king to be looked at; but, tell me, who is that fine-looking youth by his side, friend Pierre? he on the bay horse that he rides so well; now he speaks earnestly to the king, who smiles kindly on him. Oh! he reminds me of my own dear boy, so full of life and spirits; who is he, Pierre?"

"Why, that is Prince William, the king's only son, and one that any father might be proud of. They say that the love which King Henry bears to that boy is so great, he would rather lose the brightest jewel of his crown than that a hair of his head should be hurt. His hopes and joys are all wrapped up in him, and he seems happy only in his presence. In short he idolizes him."

"Then he does wrong, friend Pierre, he does wrong: we should make an idol of nothing on earth. I had a son once, and I made an idol of him; but my fair-haired boy was taken from me, and laid low in the grave; then I felt I had done wrong;" and the old man brushed a tear from his eye.

On came the royal cavalcade, courtiers, and nobles, and fair ladies—and the king and prince the centre of attraction. On a spirited palfrey, close behind Prince William, rode his sister Maude, and every now and then he turned to speak to her in words of kindness and encouragement.

"See, dear Maude, the sun is bright, and the wind fair, and the sea calm as even *you* could wish. The voyage will be short and prosperous, and ere many hours are past you will be in England."

"Which of those vessels are we to embark in?" Maude timidly asked.

"In the one to the right of the others; you may know her by the white paint on her sides; she is called 'The White Ship.'"

"She is a fine ship," observed King Henry, "and commanded by an able captain. The father of Fitz-Stephen carried over the Conqueror to England, in his first descent on those shores, and now he will have the honour of conveying the grandson of the Conqueror. You will have all your young friends with you, my dear son, nobles and knights, with Maude and all her ladies! a gay and joyous party, and a fit retinue for the future King of England and Normandy. I am getting rather old to join so many youthful spirits, and should but be a drawback on your gaiety, so I will precede you in another vessel; the ships will all sail together, and often will my eyes turn towards one of them, for the hours will seem days till I meet thee again, my loved son."

The embarkation now took place. King Henry took an affectionate farewell of the prince, and desiring Fitz-Stephen to follow immediately in The White Ship, proceeded on his voyage.

Vessel after vessel spread its sails and followed the king, yet still The White Ship delayed. The crowd from the shore, who had been watching the departure of the fleet, and had seen Prince William and his retinue embark in The White Ship, wondered that she gave no signs of sailing. There certainly was a great deal of activity on board amongst the sailors, but it did not appear to be the steady activity of preparation for a voyage.

"Ah! here comes a boat from the ship," cried Pierre; "now we shall know why they delay. Why, how is it," he called out to the sailors, "that your captain does not put about and follow the fleet?"

"All in good time," answered the sailors, laughing; "the prince has ordered some wine to be given to the ship's crew, to drink success to the trip, d'ye see. He has a liberal heart and a free hand, fit for a prince like him; our captain, Fitz-Stephen, was just drinking his health in a bumper as I left, and I heard him say 'The White Ship would soon overtake the fleet,' as of course she will, such a fast sailer."

"Are all the passengers on board?"

"All but one, and we are now come for him; Bertould the butcher, from Rouen. We are a goodly company in the ship, full three hundred, and right proud we are of our cargo. Come along, Bertould, I must have another taste of that good wine before we sail."

The boat returned, and after some time The White Ship spread her canvas and departed. In order to overtake the other vessels, which had now proceeded some distance, Fitz-Stephen crowded all sail, and by every means endeavoured to increase the speed of his ship. Prince William and his gay companions urged him on, and the vessel dashed swiftly through the water. But the fatal effects of so much wine was now visible on the sailors; many were intoxicated, and incapable of doing anything. Still the wind was fair, and The White Ship, making rapid progress, was soon out of sight of land. Fitz-Stephen, who had also partaken freely of the wine, was not so watchful as he should have been, and the prince and his companions were all gaiety and merriment, when a sudden and dreadful shock was felt throughout the vessel, and the next moment the fearful cry arose, "The ship has struck! we are lost!" Then came shrieks and cries of agony, mingled with groans of despair; for a few moments all was wild confusion and tumult, till the voice of Fitz-Stephen was heard high in command, "Let down the boat! Save the prince! if all else perish, the prince must be saved!"

Hastening to execute his own orders, he caused the boat to be lowered, and, hurrying Prince William and a few of his immediate companions into it, desired the sailors *instantly* to push off, and convey the precious charge to the shore, from which they were not very far distant. The sailors plying their oars with vigour, in a minute were several yards from the sinking ship, when a piercing cry was heard, of "Oh! my brother, save me! leave me not to perish!"

The prince knew his sister's voice; he saw her leaning over the ship's side, with outstretched and imploring arms. "Save my sister!" he exclaimed to the sailors, "put back and save my poor Maude!"

They declared they dared not, the danger would be so great.

"I care not for the danger," said the prince; "I *must* save my sister; put back I command you!"

They did so, and what they had foreseen took place ; the boat had scarcely touched the ship's side, when such numbers leaped into it that it instantly sunk, and the prince, his sister, and all it contained, perished in the deep waters !

The cries of the unfortunate people on the wreck were heart-rending as they witnessed this awful catastrophe, and saw all hope for themselves cut off ; their shrieks reached even to the king's ship, though he little thought from whence they came.

Then arose a scene of terror that I will not sadden your young hearts by describing ; and the hours rolled on, and the last one came ; and The White Ship went down with all that gay and noble company ! Oh ! how many young hearts, bounding with life and hope, had left Harfleur that morning ! and now where were they ? Of the royal, the noble, the young, and the brave, who remained to tell the mournful tale ?

One man was clinging to the floating mast when that sad hour was past, clinging with still a hope of life—it was the butcher, Bertould. As he gazed at the scene of desolation around, he thought he perceived some one buffeting with the waves. He hailed him, and was gratified to observe that, though much exhausted, the poor fellow had just strength to reach the mast. It was Fitz-Stephen, the captain of the ill-fated vessel. As soon as he had recovered himself sufficiently to speak, he exclaimed,

“ Alas ! Bertould, a sad sight ! a sad sight ! There went down a gallant ship and a brave crew ! I thought, surely that rock had been two miles to leeward of us ; but it was the wine that deceived me, Bertould, the wine ! Well, we must take comfort ; the prince is saved ; and that is more than enough to counterbalance the loss of twenty vessels. I should never have forgiven myself if I had not seen him safe.”

“ Alas ! ” said Bertould, “ he is gone down with the rest.”

“ Gone ! drowned ! what do you mean ? I put him myself into the boat ! he *must* be safe.”

“ But the boat returned to the ship, captain. Prince William insisted on rescuing his sister ; the boat was crowded and all perished ! ”

“ Then I perish too ! ” exclaimed Fitz-Stephen ; “ I cannot outlive my prince ! ” and loosening his hold of the mast, in an instant he had disappeared.

Bertould was much shocked ; he was now the only living being out of that number of three hundred, a short time since so full of life and spirits ! In that ship had gone down a hundred and forty young noblemen of the first families in England and Normandy, with many ladies of high rank. What a striking illustration this sad event was, of those words from Holy Writ,—“ Go to now, ye that say, To-day or to-morrow we will go into such a city, and continue there a year, and buy and sell, and get gain ; whereas ye know not what shall be on the morrow. For what is your life ? It is even a vapour, that appeareth for a little time, and then vanisheth away.”

The poor butcher remained in his distressing and perilous situation for many long and weary hours : night came on, and he could only look for aid to Heaven. His thoughts were most melancholy, as he pondered on his own chance of escape, and the fearful scene he had witnessed. Even if his life were spared, what terrible tidings he should have to tell ! Anxiously he watched for day-break, and keenly did he cast his eyes over the waters, to see if there were any help for him. As he looked earnestly in one direction, he perceived, to his joy, a fishing-boat coming towards

him ; he shouted for assistance with all the energy of despair, and was heard after some time, for the wind was fair and the sea calm. The fishermen rescued him from the mast, and saw with astonishment and grief all that remained of the White Ship."

"That is a melancholy story indeed !" said Florence ; "but, dear aunt, tell me, how did the poor king bear the dreadful tidings?"

"The sad news was conveyed to England the next day, and great was the sorrow of all who heard it. Many a noble house was filled with mourning and lamentation ; but the loss of the prince and the terrible blow it would be to the king, seemed to make other's griefs small in comparison to his. Though nothing else was spoken of, no one dared to tell King Henry. He had not left the coast, but was still at Southampton, anxiously waiting the arrival of his son. For three days none could summon courage to break the dreadful news to him. At last a boy was desired to fall at his feet and tell him The White Ship was lost.

"The poor king, on hearing this, fell senseless to the ground, and for a long time his grief knew no bounds. Indeed, so bitter, so overwhelming was the stroke to him, both as a king and a father, that from that hour to the day of his death, he was never seen to smile again—though he lived for fifteen years afterwards."

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JOHN BRADFORD,  
MARTYR, JULY 1, 1555.

HE was chaplain to Bishop Ridley, and a prebendary of Westminster. In piety and intrepidity of character he was not surpassed by any one of our noble army of martyrs. When Queen Mary came to the throne, Bradford was one of the first who was marked for destruction. Having been examined in the consistory court of St. Mary Overy, now St. Saviour's Southwark, and handed over to the secular power, while confined in prison he said, "Death I daily look for, yea hourly, and I think my time be but very short, therefore I had need to spend as much time with God as I can, whilst I have it, for His help and comfort."

If any inquired of his keeper what appeared to be the state of his mind when free from extraordinary excitement, whether anxiety rested on his countenance during his days of solitude, or whether his sleep was disturbed and irregular, no answer could be returned, but that peace beamed on his waking countenance, that his sleep was calm and sweet, and that he spoke with the greatest composure of his approaching death. As far as it might be said of one still clothed with mortal flesh, and therefore encompassed with infirmity, he could not be shaken, for his strength was the living God, upon whose wisdom and love he so implicitly relied, that he felt sure of protection and support, of grace for each day's trial, and of more grace in proportion as his necessities might be greater. On one occasion he rose from his bed about three o'clock in the morning, and betook himself to reading and prayer. It was on his last earthly Sabbath that he was thus early in communion with God, and a few more hours were to introduce him to the enjoyment of an endless Sabbath, in which he should no more see as through a glass darkly, but face to face. In the course of the day he had much conversation with a friend, who occupied the same chamber, concerning death and the kingdom of heaven, and "the ripeness of sin in that time."

When the tidings were announced that he must die to-morrow, Bradford uncovered his head, and, lifting up his eyes to heaven, said, "I thank God for it; I have looked for the same a long time, and therefore it cometh not now to me suddenly, but as a thing waited for every day and hour. The Lord make me worthy thereof." Presented with his martyr dress of white, he took occasion from it to pray that he might be found clothed in the wedding garments. Arrived at Smithfield, the place appointed for his martyrdom, Bradford embraced first a faggot and then the stake, and raising his hands and eyes towards heaven, he exclaimed, "O England, England, repent thee of thy sins! Beware of idolatry! beware of false antichrists! take heed that they do not deceive thee." Embracing the reeds with which he was now surrounded, he uttered these last words, "Strait is the way, and narrow is the gate that leadeth to eternal salvation, and few there be that find it." The fire was kindled, and the spirits of Bradford and his fellow-martyr, Leafe, those constant servants of the Lord, were set free to wing their happy flight into the presence of Him whom they had so boldly and faithfully confessed on earth.\*

#### THE SPIDER—AS AN EXAMPLE OF PERSEVERANCE (*continued*).

THE situations which spiders select for hanging their nets are various. Some prefer the open air, amid shrubs or plants, where flies find both food and sport. Other spiders lodge in the corners of windows or rooms, where they are sure of prey; many weave their nets in stables and out-houses, and even in cellars and deserted places, which would scarcely seem to afford a single fly. Indeed where the busy hum of man is not heard, and where the labours of the housewife are not seen, the spider loves to take up her solitary abode. Mr. Kirby says that "the Jews, in one of the fables with which they have disfigured the records of Holy Writ, relate that the reason why Saul did not discover David and his men in the cave of Adullam (1 Sam. xxiv. 4), was that God had sent a spider, which had quickly woven a web across the entrance of the cave in which they were concealed; which being observed by Saul, he thought it useless to investigate further a spot bearing such evident proofs of the absence of any human being."

Mr. Jesse has recorded an instance where two spiders formed their webs within a drawer, and continued to occupy the opposite corners of it for thirteen years. During the whole of that time the drawer was used exclusively for soap and candles, and was always kept closed and locked except when opened to put in or take out those articles. The spiders were constantly in the same position, in a hole in the inner corner of their webs, and seldom showed more of themselves than their two fore legs projecting outwards.

Most persons will have remarked the difference between the web of the spider which inhabits the house, and that which seeks its prey in the garden. The former is a *weaver*, her web being of a gauze-like texture, as if woven; but to the latter has been given the grander title of *geometrician*, from the circumstance that it forms, not a web, but a net composed of a series of concentric circles, united by radii diverging from the centre, the threads being remote from each other.

\* Biog. Brit., and Life of John Bradford, by the Rev. R. Hone, Vicar of Hales Owen.

The weaving spider, in beginning her web, often chooses the corner of a room, and takes care to secure a retreat should she be assailed by a powerful enemy. She first presses her spinners against one of the walls, thus glueing to it one end of the thread. She then walks along the wall as far as the opposite limit of the web, while the thread lengthens behind her, and there fastens the other end, pulling it in order to be sure that it is tight. As this thread is to form the outward margin or salvage of the web, it is strengthened by two or three more threads drawn along it and fixed like the first. From this outer line she draws other threads in various directions, filling up the intervals by running from one to the other, and connecting them by new threads until the whole rapidly assumes that gauze-like texture so well known in every house.

These webs present merely a simple flat surface; but to those which are found in out-houses, or among bushes in the open air, a very ingenious addition may be noticed. From the edges and surface of the main web, the spider carries up a number of single threads often to the height of many feet, joining and crossing each other in various places. These lines are not unlike the tackling of a ship, and the flies seem unable to avoid directing their flight across them; when, becoming slightly entangled, they make desperate efforts to escape, which generally have the effect of throwing them into the web, stretched below for their reception, when their doom is fixed.

But the net is not yet complete. The spider next makes a small silken apartment below the net, and quite out of sight, where she waits for the expected game; and that she may know when any is caught, a number of threads proceed from the edge of the net to that of her den, which, by their trembling, inform the spider that a fly is caught, and at the same time serve as a bridge, over which she can instantly pass to secure it.

The GEOMETRIC SPIDER usually suspends her net from trees, shrubs, plants, or buildings, in places where insects abound. Her first operation, in most instances, is to form boundary lines so as to enclose an area, the figure of which appears to be a matter of indifference; for the little geometrician seems to be well aware that she can as readily describe a circle in a triangle as in a square. She forms these boundary lines by proceeding along the objects immediately surrounding the space destined to be occupied by the net, and attaching to several points a line drawn out after her in her passage from one to another. She strengthens these lines with a few additional ones, and finally makes them tight by fixing in different directions, numerous smaller threads. Having thus completed the foundations, she next begins to fill up the outline. Fixing a thread to one of the boundary lines, along which she walks, she guides the filament produced in her progress with one of her hind feet, that it may not touch in any part and adhere prematurely, and crossing over to the opposite side, she there attaches it firmly. To the middle of this diagonal thread, which is to form the centre of the net, she fixes a second, which, in like manner, she conveys and fastens to another part of the lines encompassing the area. Along this last-formed thread she returns, drawing out another after her, which, as she does not employ any means to keep it distinct, becomes connected with that on which she is advancing, and is at last glued by its extremity to the centre of the net. In this manner, but without observing regular order in her progress, she forms about twenty or thirty rays composed of double lines, passing from the centre to the circumference, and giving the net the appearance of a wheel. She then proceeds to the centre,

turns herself round, and pulls each ray with her feet to ascertain its strength, breaking such as seem defective, and replacing them by others. She then produces, round the centre of the net, a spiral line, extending thence to the circumference, and intersecting the rays at distances gradually widening from the centre, attaching it to them by pressing her spinners against them. This spiral line serves as a temporary scaffolding for the spider to walk over, and also to keep the rays properly stretched during her succeeding operations. The spiral line, the rays and the marginal lines, are all composed of adhesive silk; but a spiral line has now to be spun from the circumference around the centre, which may be regarded as the most important part of the snare. It consists of a fine thread, closely studded with minute dew-like globules, which are of a gummy nature, as is proved by their adhering to the finger, and retaining dust thrown upon the net, while the other rays and threads remained unsmeared. These viscid threads alone retain the insects which fly into the net; and as they lose their adhesive property by the action of the air, it is requisite that they should be frequently renewed,—a process not neglected by the spider, who is quite conscious of its necessity. Placing herself at the circumference of the net, and fastening her viscid thread to the end of one of the rays, she walks up towards the centre, till she comes to the last turn of the unadhesive spiral line, along which she passes to the adjoining ray, at the same time drawing out the thread with the claws of the hind leg, nearest to the circumference. She then passes the thread to the claws of the other hind leg, and going down the ray towards the circumference, she places the foot of the unemployed hind leg on that point of the ray to which her thread is to be attached, and bringing the spinners to the spot, there makes it secure. The precise place in each ray at which to fix the thread is always ascertained by touching with the hind feet the marginal line, or the last-formed turn of the viscid spiral line. As this last line approaches the several turns of the unadhesive spiral line, the spider bites away the latter, being sensible that they are no longer of any use to her; and this fact explains why they are never seen intermixed with the turns of the former in finished nets. The spider now makes choice of some retired spot in the vicinity, and there constructs a cell, in which she may conceal herself from observation. From the centre of the net to this retreat she spins a line of communication, composed of several threads united together throughout the whole length, the vibrations of which speedily inform her of the capture of her prey; and here her labours end.

Mr. Foster, in the *Entomological Magazine*, relates a singular contrivance of the small garden-spider. "She had formed her web over the middle of a gravel-path, attaching the supporting threads to the paling on one side, and to a sun-flower on the other. The breeze was rather strong, and to keep her web steady, she had drawn up a small gravel-stone, though very nearly the size of her own body, which hung beautifully poised between two threads, about a foot above the path, and which answered the purpose she wished most admirably well; it swung backwards and forwards with the motion of the wind, but still was heavy enough to keep her web distended and steady." This circumstance has been noticed by other naturalists, but explained somewhat differently. The spider makes choice of a pebble in a gravel path as one of the *fixed* points for attaching the boundary lines; but as the work proceeds, the tension of the upper lines actually lifts the stone from off the ground, and being thus delicately hung like a pendulum, it swings to and fro in the breeze.

The spider has as yet been described only as forming her snare in places of easy access ; but it is not uncommon to see nets fixed to objects between which the animal could not, in the first instance, have walked ; for example, between distant plants growing in water. How, then, does the spider contrive to extend her main line, which is often many feet in length, across a stream ? In answering this question, we have only to relate the surprising instances of patience and perseverance in this little animal, witnessed by the Rev. Mr. Kirby and other observers.

A large garden spider was placed upon a stick, about a foot long, set upright in a vessel of water. After fastening its thread (as all spiders do before they move) at the top of the stick, it crept down the side until it felt the water with its fore feet, which seem to serve the same purpose in spiders as the antennæ or feelers in insects. The spider then immediately swung itself from the stick (which was slightly bent), and climbed up by the thread to the top. This it repeated, perhaps, twenty times, sometimes creeping down a different part of the mast, but more frequently down the very side it had so often traversed in vain. "Wearied with this sameness in its operations," says the narrator, "I left the room for some hours. On my return I was surprised to find my prisoner escaped, and not a little pleased to discover, on further examination, a thread extended from the top of the stick to a cabinet seven or eight inches distant. Eager to witness the process by which the line was constructed, I replaced the spider in its former position. After frequently creeping down and mounting up again as before, at length it let itself drop from the top of the stick, not as before by a single thread, but by *two*, each distant from the other about the twelfth of an inch, guided as usual by one of its hind feet, and one apparently smaller than the other. When it had nearly reached the surface of the water it stopped short, and broke off close to the spinners, the smallest thread, which still adhering by the other end to the top of the stick, floated in the air, and was so light as to be carried about by the slightest breath." On bringing a pencil near the loose end of this line, Mr. Kirby found that it did not adhere from mere contact ; he therefore twisted it once or twice round the pencil, and then drew it tight. The spider, which had previously climbed to the top of the stick, immediately pulled at it with one of its feet, and finding it sufficiently firm, crept along it, strengthening it as it proceeded by another thread, and thus reached the pencil.

*(To be continued.)*

#### THE SPANISH LADY.

WILL you hear a Spanish lady,  
How she woo'd an Englishman?  
Garments gay, as rich as may be,  
Decked with jewels had she on ;  
Of a comely countenance and grace was she,  
Both by birth and parentage of high degree.

As his prisoner there he kept her,  
In his hands her life did lie ;  
Cupid's bands did tie them faster,  
By the liking of an eye.  
In his courteous company was all her joy,  
To favour him in anything she was not coy.

But at last there came commandment

For to set all ladies free,  
With their jewels still adorned,  
None to do them injury.

"O, then," said this lady gay, "full woe is me!  
O let me still sustain this kind captivity!"

"Gallant captain, show some pity  
To a lady in distress,  
Leave me not within this city,  
For to die in heaviness:  
Thou hast set, this present day, my body free,  
But my heart in prison still remains with thee."

"How should'st thou, fair lady, love me,  
Whom thou knowest thy country's foe?  
They fair words make me suspect thee;  
Serpents lie where flowers grow."

"All the harm I wish on thee, most courteous knight,  
God grant upon my head the same may fully light!

"Blessed be the time and season,  
That thou camest on Spanish ground;  
If you may our foes be termed—  
Gentle foe we have you found.  
With our city you have our hearts each won,  
Then to your country bear away that is your own.

"Rest you still, most gallant lady;  
Rest you still, and weep no more;  
Of fair flowers you have plenty,  
Spain doth yield you wondrous store.  
Spaniards fraught with jealousy we oft do find,  
But Englishmen throughout the world are counted kind."

"Leave me not unto a Spaniard,  
Thou alone enjoyest my heart;  
I am lovely, young, and tender,  
Love is likewise my dessert;  
Still to serve thee day and night my mind is ptest;  
The wife of every Englishman is counted blest."

"It would be a shame, fair lady,  
For to bear a lady hence;  
English soldiers never carry  
Any such without offence."  
"I will quickly change myself if it be so,  
And like a page will follow thee where'er thou go."

"I have neither gold nor silver  
To maintain thee in this case:  
And to travel is great charges,  
As you know in every place."  
"My chains and jewels every one shall be thine own,  
And eke ten thousand pounds in gold that lies unknown."

"On the seas are many dangers,  
Many storms do there arise,  
Which will be to ladies dreadful,  
And force tears from watery eyes."  
"Well, in troth I shall endure extremity,  
For I could find in heart to lose my life for thee."

“ Courteous lady, leave this folly,  
 Here comes all that breeds the strife ;  
 I, in England, have already  
 A sweet woman to my wife ;  
 I will not falsify my vow for gold nor gain,  
 Nor yet for all the fairest dames that live in Spain.”

“ O how happy is that woman  
 That enjoys so true a friend !  
 Many happy days God send her,  
 And of my suit I'll make an end :  
 On my knees I pardon crave for my offence,  
 Which love and true affection did first commence.

“ Commend me to that gallant lady,  
 Bear to her this chain of gold,  
 With these bracelets for a token,  
 Grieving that I was so bold,  
 All my jewels in like sort, take thou with thee ;  
 For they are fitting for thy wife, but not for me,

“ I will spend my days in prayer,  
 Love and all her laws defy !  
 In a nunnery I will shroud me,  
 Far from any company :  
 But, ere my prayers have an end, be sure of this  
 To pray for thee and for thy love I will not miss. \*

“ Thus farewell, most gallant captain,  
 Farewell to my heart's content !  
 Count no Spanish ladies wanton,  
 Though to thee my heart was bent :  
 Joy and true prosperity go still with thee !  
 “ The like fall unto thy share most fair lady.”\*

\* “This pathetic tale”—which, whether viewed as a picture of human emotions under circumstances applicable to all times, or as a noble and discriminating tribute to English national character of the seventeenth century, “is,” says a writer in the ‘Edinburgh Review,’ April 1846, “one of the most remarkable and perfect compositions of its class”—is taken from ‘Percy’s Reliques,’ where it was printed from an old black-letter copy, corrected in part by the editor’s folio MS.

A copy in black letter, printed by and for W.[illiam] O.[nley], and sold by the booksellers of Pyc-Corner and London Bridge, and another in Roman character, are in the Roxburgh Collection, in the British Museum. It probably took its rise from one of those descents made on the Spanish coast in the time of Queen Elizabeth. Of its authorship nothing appears to be known. There is a tradition in the West of England, says Percy, that the person admired by the Spanish lady, was a gentleman of the Popham family, and that her picture with the necklace was, not many years ago, preserved at Littlecot, near Hungerford, Wilts, the seat of that family.

Another tradition pointed out Sir Richard Levison of Trentham, in Staffordshire, as the subject of this ballad, who married the daughter of the Earl of Nottingham, and was eminently distinguished as a naval officer in the expeditions against the Spaniards in the latter end of Queen Elizabeth’s reign.

The discussions in the ‘Edinburgh Review’ called forth another claimant for the honour of his family. In a letter to the ‘Times,’ signed Charles Lee, the writer asserts that the hero of the tale was Sir John Bolle, and that the portrait of Sir John, drawn in 1596, at the age of 36, having on the gold chain given him by the Spanish Lady, is now in the possession of Thomas B. Borvill Esq., of Ravenfield Park, Yorkshire.

THE  
HOME FRIEND;

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SEA-SIDE PLEASURES, No. III. (*continued*).



BARRICANE.

As I pursue my solitary walks along the lanes and through the meadows, the thought often strikes my mind with powerful interest, that in all probability the roads, and fields, and fences that I look upon have existed nearly as they are now for a thousand years. Improvements, of course, are made; two fields are occasionally thrown into one, or one is divided into two; a new wall is built when the old one has become dilapidated, or a quickset hedge is planted to replace one that is dying out; roads have been

levelled and perhaps macadamized in modern times, and here and there a new line of road has been made. But all these changes do not affect the fact that, generally speaking, the roads and pathways, the subdivisions of the farms into fields, and the sites of the hamlets and villages, remain as they have existed from time immemorial.

The little village of Morte, associated as it is with the history of De Tracy, one of the knights who executed the vengeance of Henry the Second on Thomas à Becket, carries us back to the middle of the twelfth century. It was then a village, as it is now; how much earlier it existed, or how far back we should look to trace its origin, I know not. According to early historians, Sir William De Tracy retired to this neighbourhood; and there is a cave near Ilfracombe which legendary tradition points out as the place of his first concealment. It seems more certain that he took refuge in the remote and isolated village of Morte, which was at that time the property of his family. The old weather-beaten church of grey stone, that rears its tower on a little hill, the most conspicuous object far or near, was built by him as a supposed expiation for his crime, and within an aisle of this church his tomb still stands. Its antiquity is very evident. The black marble cover bears the rude effigy of the repentant knight, but clothed in the full canonical robes of that priesthood which he is said to have assumed in his retirement. An inscription in old Norman characters records the name and prayer of the dead : "SYRE WILLIAME DE TRACE . . . DIEU DE SA ALME EYT MERCY." An old and respectable inhabitant of the village informed me of a curious fact. His mother was buried close to De Tracy's tomb, a slight six-inch wall being the only separation between them. This was broken in at the time of the interment, and the people, looking into the knight's sepulchre, saw his bones. No trace of the skull, however, was found; and the old farmer's inference was, that the head had been sent as a relic to his friends at the time of his burial, "Because," said he, "if the head had been buried here, it would have been seen, for we reckon the skull to be the most lasting of all the bones."

If, indeed, the murderer felt the penitence which he professed, the dreary desolation of the scene around him must have been in peculiar keeping with the condition of his mind. Accustomed to the wild excitement of a soldier's life, the jollity of the camp alternately exchanged for the splendour of the court, it must indeed have been a change to wear away his lonely existence in a place like this. The whole region round is high, bleak, and rocky, a succession of elevated downs, partly cultivated indeed, but destitute of trees, of hedges, and almost of bushes, save the prickly furze that crowns the summits of the hills. The land here forms a point which juts out, a headland of rugged rocks, far into the sea, and it is exposed on both sides to the fury of the storms which rage upon this coast with more than usual violence. A summer's sun was sparkling upon the sea when I looked at it; but the ridges and lines of sharp-pointed black rocks, left bare by the receding tide, and bristling up in horrible ruggedness, were even then sufficiently appalling; what must they be when winter winds are howling, when the sky is obscured by murky clouds, and when the sea, lashed up by the tempest, is breaking over those rocks with awful roar, and dashing its masses of white foam far up the precipitous cliffs?

Indeed, this iron-bound coast has long enjoyed an unenviable notoriety in the annals of shipwreck. The name of the village, Morte, is understood to have been derived from the fatality which so commonly attended voyaging along this shore; the Morte Stone, or the Rock of Death, being so named

by Norman mariners, perhaps even long before the Conquest. The Morte Stone is a high and prominent point of a long line of sunken rocks, such as in nautical language is termed a bridge, running out into the sea to a considerable distance. The waves cover them at high water, but breakers almost always indicate their presence.

The unusual frequency of shipwreck on these rocks appears to be owing partly to the fogs which often obscure the atmosphere in winter, but more especially to the currents of this coast. The flood-tide setting strong upon the Stone, and the ebb-tide setting north-west, the difficulties of navigation, and the hazard of striking this dangerous sharp ledge, are greatly increased, not only to strangers, but to those who are well acquainted with its position; and when any vessel strikes the ledge, her loss, and frequently the loss of life to a fearful extent, of necessity follows.

Two years ago last winter, no fewer than five vessels were wrecked here, during the months of January and February. One of these accidents was the occasion of a gallant exploit, whereby nine lives were preserved. Rockham Bay, the little cove I had just quitted, was the scene of this daring and successful feat. The ship "Thomas Crisp," of Bristol, struck on the Morte Stone during a thick fog, on the 17th of January 1850, and immediately went to pieces. The crew, ten in number, took to their boats, with the exception of one man, who was drowned in quitting the sinking vessel.

It happened that the "Cornwall" steamer, a boat that plies weekly between Bristol and Hayle, was passing at the time. Captain Vivian, her commander, heard what at first he took for the wailing cry of a sea-bird; it was, however, repeated, and straining his eyes in the gathering dusk of evening, he saw a black speck. The experienced seaman noticed that no spray broke over it, whence he concluded that the object was afloat, and that it was probably some ship's boat.

It was now five o'clock, a January evening, the sky obscured with fog, and a heavy gale blowing from the westward; a narrow bay was before him, which he knew to be bristling with sunken and exposed rocks, among which the sea was breaking and foaming like a field covered with snow. But humanity called, and the gallant commander, supported by his willing crew, took no counsel with fear, but at once resolved on the perilous adventure of steering his steamer into Rockham Bay. He succeeded, with much labour and danger, in rescuing the nine shipwrecked sailors; but so perilous was his position, that he was obliged to back his vessel out of the Bay, not having room to turn her.

To add to the horrors of this inhospitable coast, a people still more inhospitable reside in the hamlets around, who live by the inhuman occupation of wrecking. A memorial, lately presented to the Trinity Board from the most respectable inhabitants of North Devon, praying for the erection of a lighthouse on the Morte Stone, makes the following statement:—"From the lonely situation of these rocks, and the absence of proper protection, such as a mounted guard, or efficient help in case of need, except from the coast-guard, when called on, under the vigilant superintendence of the Receiver of Droits of Admiralty, much property is lost, and human life sacrificed by the barbarous conduct of lawless wreckers from the neighbouring hamlets."

Women, no less than men, are ready to engage in these lawless deeds; and in the horrible tales which are whispered in the neighbourhood, of violence and even murder, perpetrated upon poor shipwrecked mariners,

women, strange to say, commonly play the most prominent part. It is hoped that matters do not now proceed to such dreadful extremities as these. The present generation well remembers a wretched woman, Bayle by name, who was reputed to have murdered one Captain Harry, the master of a trading vessel, which had run ashore on Woollacombe Sands. The captain had struggled to the rocks at Barricane, where he lay exhausted; when this vile woman, coming up with her "pick," a sort of pitchfork, in her hand, is said to have pushed him back into the sea, and to have kept him under water with the iron prongs, until he was drowned. Tradition states that remorse overcame her reason, and that she died a maniac. It is right to add, however, that a respectable inhabitant of Morte, who remembers the woman well, told me that he thought the imputation of the crime rested on insufficient evidence.



MORTE POINT.

The farmers of the neighbourhood, on the other hand, have always signalized themselves by their hospitality, cheerfully rendering every assistance in the preservation of life and property. The kind-hearted old man alluded to may possibly have had a pardonable wish to screen his birthplace from a stain so foul.

This worthy farmer kindly offered himself as my cicerone. "You must not go away," said he, "without seeing the ancient stone that's out upon the point. They tell me that it's the work of man, in very old times; and I have heard say that poor human creatures used to be killed there by way of sacrifice."

"Indeed," replied I, "it will gratify me to see it. Lead the way."

Accordingly he took me across the fields and over the downs, for about a quarter of a mile, in the direction of the point, till we came to where the land slopes down to the cliffs. There, just below the brow of the hill, half hidden by trailing brambles, was a huge Crwmlech, an irregular-oval mass of stone, time-stained and grey with scaly lichens, resting partly on the hill side and partly on a single stone at one end, and two (a small one on a large one) at the other. The farmer's mind was occupied with the shelter which the stone afforded to his sheep in stormy weather, and with the sagacity they displayed in crowding under it; but my thoughts wandered back to the time when this country was among "the dark places of the earth, full of the habitations of cruelty;" and I reflected with thankfulness on the Gospel light that now penetrates the remotest corners of this favoured land, so long overspread with Druidical and Papal darkness.

Thence we went round a little, and down a grassy declivity, to a high projecting point, almost cut off from the mainland by deep coves with abruptly precipitous sides. "They call this the *pin-pin-something*," said my guide, "I never can think of the name."

"The peninsula, perhaps," I suggested.

"That's it, sir. It is a curious place. Look down this cliff into the gully; take care of your steps, for 'tis enough to make one giddy to stand here. You would not expect to find a hare in such a place as this; yet I'll be bound there's one under those bushes, at least there almost always is; see if I don't start her with this stone."

As he spoke he set a large stone rolling down the precipice, shouting at the same time vigorously. The mass shot and bounded down from point to point, and its echoes resounded from the narrow sides of the glen; but no hare appeared. However, I was content to take the matter on his word, especially as he assured me that he had seen a pursued hare partly run and partly leap down this wall of rock, though scarcely less than perpendicular.

"Look at this cove," said he, pointing to a long narrow inlet of the sea on our right, "just at the mouth of it yonder, though it looks so narrow that you would almost fancy you could jump across from rock to rock, the water is amazing deep; we call it Morte Well, it is a famous place for lobsters, and I'll warrant there are several pots sunk there now."

Hence our gaze went out to the Morte Stone, just appearing above water, for we were standing on the fatal Point; and still farther out rose and sank, with every swell of the wave, the tall black buoy which has been moored there as a warning to the incautious mariner.

The conversation naturally turned again to the perils and disasters of shipwreck. Here my guide was eloquent; "Ah! sir," said he, "I've seen sad sights; I've seen as many as five-and-thirty corpses lying upon my father's barn-floor at a time!"

"Tell me the particulars, if you please."

"It is near fifty years ago; the 'Weasel,' His Majesty's sloop of war, was lying in Appledore Pool. One evening it came on to blow a tremendous gale from the north-west. Father went on the top of the hill to look out just before nightfall, and he saw the 'Weasel' right hereaway, under the point; as he came in, he said, 'the sloop will be either on Woollacombe Sands or in Rocklam Bay before morning.' He went down pretty early, and all the coves between this and the Sands were full of the wreck; spars and timbers and plank, cordage and blocks, iron and copper

work, casks, and kids, and chests, and officers' furniture, and all sorts of things, most pitiful to see ; and what was worse than all, the bodies, all sodden and bleached, were washed up, and lay about the rocks and in the holes, by dozens. We gathered together thirty-five of them, as I told you, and did all we could for them, poor fellows ! we gave them Christian burial."

But I now bade adieu to the friendly farmer, and proceeded to follow the rest of our party, who had gone down at once to Barricane, our slow-paced steeds having been put up at Morte. The inn—which blazons forth the name of "THE CHICHESTER ARMS," in large black letters painted on the white wall, and stretching from one end of the house to the other—stands at the very top of the village. From its yard-gate a road winds down for half a mile to Barricane and Woollacombe Sands. But before I proceeded, I paused at the gate for a few minutes, arrested by the soft beauty of the landscape. The swell of the downs in the foreground intercepted the view of Barricane, and of all the other coves which I had just seen from the Point ; so that all the ruggedness and savage grandeur, so characteristic of the prospect from thence, was here quite shut out.

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NINEVEH—WAR (*continued*).



RIDING-HORSE GEAR.

THE head-gear of the riding-horse did not differ materially from that of the chariot-steed. But instead of the collars and straps that belonged to the yoke, a large crescent-shaped collar, considerably wider in the front than behind, hung loosely around the neck, descending on the chest. It was much decorated, either embroidered or embossed, and furnished with large tassels at its bottom. The rider rarely used any saddle in the earlier periods, but the royal horse was covered with a square fringed cloth that

came half way down the sides, and a square saddle-cloth richly embroidered and fringed was over all. This appears on a reserve-horse led by an attendant after the king hunting in his chariot. A short bridle of plaited thongs, or wreathen chains, was sometimes attached to the bit of a riding-horse, and was used for leading, as well as for guiding ; in the latter case, the rider grasped it beside the beast's neck.

The whip was always short ; in the earlier era it was a short staff, with a ring of plaited thongs at the end, to which was attached a single lash of apparently a single thong. At Khorsabad there was no plaited ring, but the lash was directly connected with the staff ; it was generally thick in the middle, as with us, but in a greater degree ; it terminated in one, two, or even three tips. A double-lashed whip appears in the sculptures of Xanthus.

Saddle-cloths had come into common use in the later eras : in both the Khorsabad and Kounyujik sculptures we see the horsemen seated on a cloth with prolonged corners, generally ending in a tassel, but sometimes cut into three or four points, recalling the idea of a wild-beast's skin with the paws attached, in which it no doubt originated. Large square saddle-cloths are represented on the reserve-horses at Kounyujik, without any



SADDLE-CLOTH.

housings. Saddle-cloths of the former shape are now extensively used in the East, made of velvet or fine woollen cloth, elaborately embroidered at the edges and corners with gold and silver thread.

"The horses of the Assyrians," as Mr. Layard observes, "were well formed, and apparently of noble blood. No one can look at the horses of the early Assyrian sculptures without being convinced that they were drawn from the finest models. The head is small and well-shaped, the nostrils large and high, the neck arched, the body long, and the legs slender

and sinewy." The spirit, martial courage, and fleetness of the Chaldean war-horses, and the extent to which they were employed in battle, are alluded to by the prophet.

"Their horses also are swifter than the leopards, and are more fierce than the evening wolves: and their horsemen shall spread themselves, and their horsemen shall come from far; they shall fly as the eagle that hasteth to eat." (Hab. i. 8.)

Cavalry, however, seems to have been but little used until the latest period of the empire. A small band of mounted archers was sometimes employed in the early time, clothed in helmet and cuirass, and riding without either saddle or stirrups; and, strange to say, the archer having both hands engaged, was accompanied by another horseman, who riding by his side, held the reins both of his fellow's steed and of his own. Cavalry was used for pursuit of a flying foe; a horseman is represented pursuing, with extended spear, an enemy mounted on a slender dromedary. The Assyrian pursuer has a saddle-cloth, but no stirrups, nor even a bridle.

In the Khorsabad battle-scenes mounted troops are more common. Heavy-armed horse accompanied the royal chariot, always furnished with bow and quiver in addition to their other weapons.

But it is in the sculptures of the Kouyunjik palace that cavalry occurs most numerously. Long lines of horse, well accoutred with helm and corslet, spear and sword, and sometimes with bow and quiver in addition, are represented as accompanying the king in those expeditions into forest-covered mountainous regions, which seem to have been so characteristic of the reign of Sennacherib.

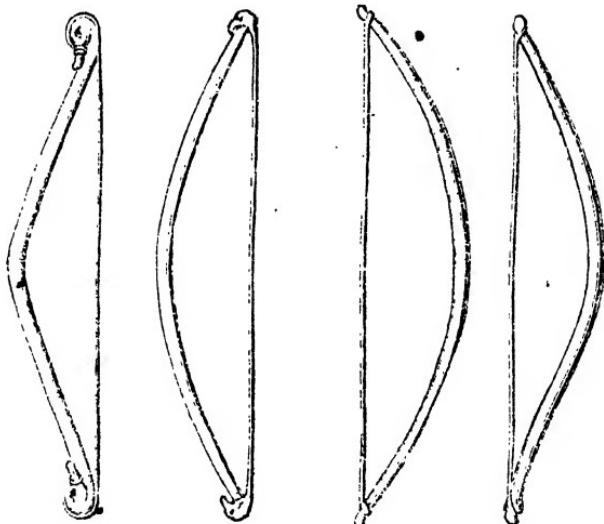
The main reliance was upon the foot-soldiers; and these, like the mounted corps, comprised archers and spearmen. Whether sappers and miners constituted a distinct body, we know not; most probably these offices were undertaken by individuals selected from the common ranks. Artillery men, who worked the mighty and ponderous engines, and who planted and mounted scaling-ladders, were also, of course, foot-soldiers. The infantry in the later periods marched before the chariots, as the cavalry followed them. Their weapons were the bow and quiver, the sword, the spear, and the mace; their defensive armour the helmet, the cuirass, or the complete suit of mail, the round buckler, and the large target. These arms, which were not equally distributed to all the ranks, we now proceed to describe.

The bow has always been considered eminently characteristic of Asiatic warfare, and its prominence in the battle-scenes of Assyria fully bears out what has been handed down to us from classic antiquity. Archers seem to have played the principal part in Assyrian warfare, and to have served not only on foot, but on horseback and in chariots.

The form of the bow was simple, consisting of a single arch, with the points slightly recurved; it was slender, commonly tapering to each extremity, and highly elastic, for when drawn, it formed a semi-ellipse. In some sculptures found at Khorsabad the bows were coloured red; which probably indicated that they were made of bronze. \* And this agrees with those passages of Scripture, as 2 Sam. xxii. 35; Job xx. 24; and Ps. xviii. 35, in which a "bow of steel" is spoken of; for the word rendered *steel* in these passages, elsewhere signifies brass (or rather bronze, a compound of copper and tin), and is so rendered.

The Assyrian bows when undrawn, but *strung* (as they are invariably represented), frequently formed an obtuse angle in the middle, rather than

a curve, as if constructed of two pieces united. There was much diversity in the comparative elegance of their shape.

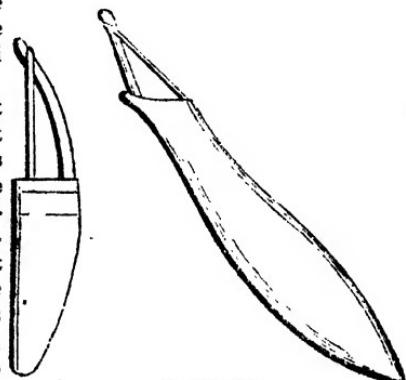


Bows.

The bowstring formed a loop at each end, probably a thong of raw hide so cut; and the extremities of the bow being knobbed had a notch on the upper side, into which the loop was slipped over the end. The ends of the bow were sometimes recurved more or less; and sometimes were fashioned into the head of an eagle. In the later period the head of a duck was the favourite form, the beak laid upon the outer edge, and pointing towards the centre of the bow.

The string was drawn not to the ear, according to the custom of the Egyptians and our own forefathers, nor to the breast, in the ineffectual manner practised by the early Greeks, but intermediately, to the right shoulder. When not in actual use the weapon was slung over the shoulder, the arm being passed within the string.

A bow-case was occasionally (but very rarely) used, from the earliest to the latest period; for it occurs on a horseman in a hunting scene from the north-west palace at Nimroud, and on two occasions at Kouyunjik, worn both by horse and foot soldiers in mountain forests, where perhaps the humidity of the air was hurtful to the bowstring. In both scenes, however, out of many who carry bows, one or two only carry a bow-case. It was worn behind the left shoulder, and covered only about half of the bow, which it exactly fitted, the rest of the im-



BOW-CASES.

plement projecting from its top. It was probably made of leather, embossed and gilded.

The arrows seem to have been about equal in length to the "cloth-yard shafts" of our Saxon forefathers. What their material was we do not certainly know: Mr. Layard suggests that they were reeds; but at Khorsabad they are painted red, like the bows, with lance-heads of blue, which may indicate a copper or bronze shaft tipped with steel.

The heel being dilated to form the notch, as seen in the spirited hunting scene in the British Museum, in which the lion is gnawing his leg in agony,—would indicate that the shaft was not formed of reed nor of wood, unless a notched button of harder material, as metal or ivory, were attached to it.\*

Several allusions in Scripture indicate that arrows were sometimes made of polished metal.

"In the shadow of his hand hath he hid me, and made me a *polished shaft*; in his quiver hath he hid me." (Isa. xlix. 2.)

"Make *bright* the arrows." (Jer. li. 11.)

"For the king of Babylon stood at the parting of the way, at the head of the two ways, to use divination: *he made his arrows bright.*" (Ezek. xxi. 21.)

"At the *light* of thine arrows they went, and at the shining of thy glittering spear." (Hab. iii. 11.)

The Assyrian arrows were winged with the vanes of feathers, attached one on each side a little above the notch, and trimmed symmetrically. The feathers of large birds were alone suitable for this purpose.

Whether poisoned arrows were used by the Assyrians we have no evidence; the Greeks and Romans considered them as indicative of a barbarous warfare, unworthy of civilized armies. Several Asiatic nations used them, as the Sauromatae, Getæ, Scythians, and Arabs. Job, who is supposed to have been an Arab, distinctly alludes to the practice.

"For the arrows of the Almighty are within me, the poison whereof drinketh up my spirit." (Job vi. 4.)

#### BISHOP JEWELL.

DIED 1571. AGED 49.



DR. JOHN JEWELL was eminent for piety, learning, and meekness of disposition; he was Bishop of Salisbury, and is well known by his work, an "*Apology for the Church of England.*"

\* In the Great Exhibition were arrows taken from the Sikhs in the late war, in which the shaft is of reed, the point of steel, and the *yaufi* of ivory; the form of this last is much like that of the Assyrian.

In his life of Richard Hooker, Isaac Walton says "That as Bishop Jewell lived so he died, in devout meditation and prayer, and in both so zealously, that it became a religious question, whether his last ejaculations or his soul did first enter into heaven."

We are informed by his biographer, that when he was urged not to exert himself too much by preaching on a certain occasion, as it was better that the people should want one sermon than be altogether deprived of such a preacher, the bishop replied, "It best becometh a bishop to die preaching," seriously thinking perhaps upon the comfortable assurance of his Master, "Happy art thou, my servant, if when I come, I find thee doing." Wherefore that he might not deceive the people's expectation, he ascended the pulpit; and now, nothing but spirit (his flesh being pined away and exhausted), read his text out of Galatians v. 25, "Walk in the Spirit," and with much pain made an end of his discourse. Presently after the conclusion, he was forced to take his bed, and concluded that his dissolution was not far off.

The following Saturday, nature shrinking and failing, he called all his household about him, and, after an exposition of the Lord's Prayer, thus breathed forth his last address:—

"I see that now I am to go the way of all flesh, and I feel the arrows of death already fastened in my body; wherefore I am desirous, in a few words, whilst yet my most merciful God vouchsafeth me the use of my tongue, to speak unto you all. It was my prayer always unto God, since I had my understanding, that I might honour his name with the sacrifice of my flesh, and confirm his truth with the oblation of this my body unto death, in the defence thereof; which seeing He hath not granted me in this, yet I somewhat rejoice and solace myself that it is worn away and exhausted in the labours of my calling. For while I visit the people of God, God, my God, hath visited me. I beseech you all that are about me, and all others whom I ever offended, to forgive me. And now that my hour is at hand, and all my moisture dried up, I most earnestly desire of you all this last duty of love, to pray for me and help me, with the ardency of your affection, when you perceive me, through the infirmity of my flesh, to languish and wax cold in my prayers. Hitherto I have taught you and many others, now the time is come wherin I may and desire to be taught and strengthened by every one of you."

Having thus spoken, with something more to the like purpose, with much pain and interruption, he desired them to sing the 71st Psalm, which begins thus: "In thee, O Lord, I put my trust, let me never be confounded;" himself joining with them as well as his exhausted strength would permit. And when they recited those words, "Thou art my hope, O Lord, my trust even from my youth," he added, "Thou only wast my whole hope;" and as they went forward, saying "Cast me not off in the time of age, forsake me not when my strength faileth me; yea, even to mine old age and grey head forsake me not, O God," he made this application to himself, "He is an old man, he is truly grey-headed, and his strength faileth him, who lieth on his death-bed." To which he added other short prayers, as if he were moved thereto, by the power of God's Spirit, saying, "Lord, take from me my spirit. Lord, now let thy servant depart in peace: break off all delays; suffer thy servant to come unto Thee: command him to be with Thee; Lord receive my spirit."

At this time, when one of those who stood by prayed with tears, that, if it might stand with God's pleasure, He would restore him to his former

health, the pious Jewell overhearing him turned his eyes, as if he were offended, and spoke to him those words of Ambrose :—“ ‘ I have not lived so that I am ashamed to live longer, neither do I fear to die, because we have a merciful Lord.’ A crown of righteousness is laid up for me. Christ is my righteousness. Father, let thy will be done; thy will I say, and not my will, which is imperfect and depraved. Lord, confound me not. This is my to-day,” alluding probably to those words of Christ, “ To-day shalt thou be with me in Paradise;” “ This day let me quickly come to Thee. This day let me see the Lord Jesus !”

After a few fervent inward prayers of devotion, and sighs of longing desires, the soul returned to God that gave it. Mr. Ridley, the steward of his house, closed his eyes. Such was the death of Bishop Jewell, a most worthy trumpet of Christ’s glorious Gospel.\*

**MEDITATION.**—“ Let me die the death of the righteous, and let my last end be like his !”†

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#### MONSOONS.



In the Indian Ocean certain periodical winds prevail, which blow for nearly six months of the year in one direction, and for the other six in an opposite direction. The Malays call them *Moosoen*, which signifies *year* or *season*. In English, this term has been corrupted into *Monsoons*.

These winds blow with most regularity between Hindostan and the eastern coast of Africa. When the sun is south of the equator, that is, from October to April, a north-east monsoon prevails; but when the sun is north of the equator, that is, from April to October, a south-western current becomes established. When the sun passes the equator and the monsoons are changing their direction, variable winds or tempests generally occur. This disturbance is called by seamen the *breaking up of the monsoons*.

\* Life of Bishop Jewell, prefixed to Jewell’s “ Apology ;” Garbrand, &c.

† Num. xxiii. 10..

The south-west monsoon is the most remarkable rainy season in India ; and a description of it will convey a correct idea of the monsoon in the greater part of India. It extends from Africa to the Malay peninsula, and deluges all the intermediate countries within certain lines of latitude for four months in the year. In the south of India this monsoon commences about the beginning of June, but it gets later in advancing towards the north. "Its approach is announced by vast masses of cloud that rise from the Indian Ocean, and advance towards the north-east, gathering and thickening as they approach the land. After some threatening days, the sky assumes a troubled appearance in the mornings, and the monsoon in general sets in during the night. It is attended with such a thunderstorm as can scarcely be imagined by those who have only seen that phenomenon in a temperate climate. It generally begins with violent blasts of wind, which are succeeded by floods of rain. For some hours lightning is seen almost without intermission : sometimes it only illuminates the sky, and shows the clouds near the horizon ; at others, it discovers the distant hills, and again leaves all in darkness, when in an instant it reappears in vivid and successive flashes, and exhibits the nearest objects in all the brightness of day. During all this time the distant thunder never ceases to roll, and is only silenced by some nearer peal which bursts on the ear with such a sudden and tremendous crash as can scarcely fail to strike the most insensible heart with awe. At length the thunder ceases, and nothing is heard but the continual pouring of the rain and the rushing of the rising streams. The next day presents a gloomy spectacle : the rain still descends in torrents, and scarcely allows a view of the blackened fields ; the rivers are swollen and discoloured, and sweep down along with them the hedges, the huts, and the remains of the cultivation which was carried on during the dry season, in their beds.

"This lasts for some days, after which the sky clears, and discovers the face of nature changed as if by enchantment. Before the storm, the fields were parched up, and, except in the beds of the rivers, scarce a blade of vegetation was to be seen : the clearness of the sky was not interrupted by a single cloud, but the atmosphere was loaded with dust, which was sufficient to render distant objects dim, as in a mist, and to make the sun appear dull and discoloured till he attained a considerable elevation : a parching wind blew like a blast from a furnace, and heated wood, iron, and every other solid material even in the shade ; and immediately before the monsoon this wind had been succeeded by still more sultry calms. But when the first violence of the storm is over, the whole earth is covered with a sudden but luxuriant verdure ; the rivers are full and tranquil ; the air is pure and delicious ; and the sky is varied and embellished with clouds. The effect of this change is visible on all the animal creation, and can only be imagined in Europe by supposing the depth of a dreary winter to start at once into all the freshness and brilliancy of spring. From that time the rain falls at intervals for about a month, when it comes on again with great violence ; and in July the rains are at their height : during the third month they rather diminish, but are still heavy ; and in September they gradually abate, and are often entirely suspended till near the end of the month, when they depart amid thunders and tempests as they came."\*

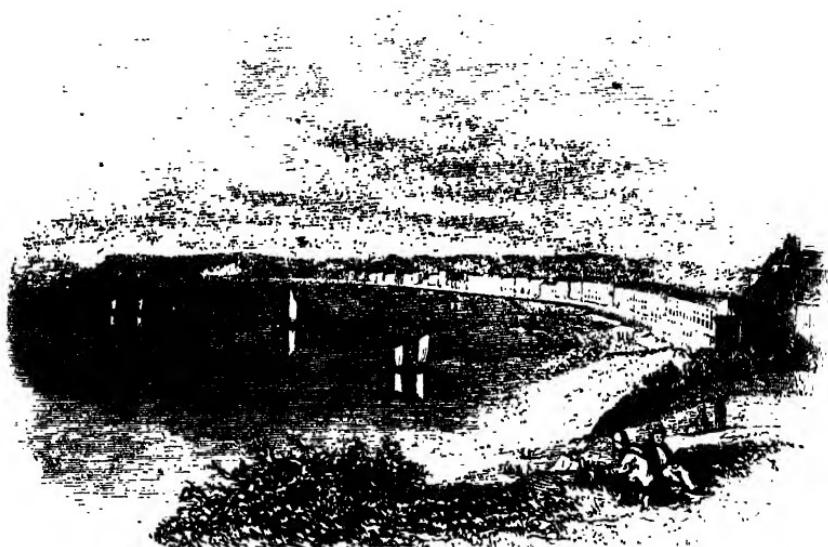
The effect of the monsoon upon the ocean is well described by Mr. Forbes. He says, "at Aujengo the monsoon commences with great

\* Elphinstone's Caubul.

severity, and presents an awful spectacle ; the inclement weather continues with more or less violence from May to October. During that period the tempestuous ocean rolls from a black horizon, literally of 'darkness visible,' a series of floating mountains heaving under hoary summits, until they approach the shore, where their stupendous accumulations flow in successive surges, and break upon the beach : every ninth wave is observed to be generally more tremendous than the rest, and threatens to overwhelm the settlement. The noise of these billows equals that of the loudest cannon, and, with the thunder and lightning so frequent in the rainy season, is truly awful. During the tedious monsoon I passed at Anjengo, I often stood upon the trembling sand-bank to contemplate the solemn scene, and derive a comfort from that sublime and omnipotent decree, ' Hitherto shalt thou come but no further ; and here shall thy proud waves be stayed.'

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#### WEYMOUTH.



In the inner curve of a spacious and beautiful bay, formed on the coast of Dorsetshire, by the promontories of St. Alban's Head and Portland Bill, and at the mouth of the little river whence it takes its name, stands the ancient port of Weymouth, now better known as a favourite autumnal watering-place than a sea-port.

Sheltered by hills, the fine beach round which it spreads, forms a gradual descent of firm and level sand, rendering it a delightful promenade for the lovers of the sea-side, while, at the same time, they can enjoy many of the advantages of an ocean climate in true perfection ; for so equable and temperate are the seasons, that many plants which in other parts of England require protection from cold, flourish at Weymouth throughout the winter in the open air. The geranium grows luxuriantly, and the

large and small-leaved myrtle are out-of-door plants ; in fact, the salubrious climate, in every point, justifies the opinion of the celebrated Dr. Arbuthnot, who came in his early days to settle at Weymouth, and remarked, that “a physician could neither live nor die there.”

The town of Weymouth was formerly a distinct borough, but in the reign of Elizabeth it was united with Melcombe Regis, a town so called from being built on the demesne lands of the Crown, and both places are now known by the general name of Weymouth. They are divided from each other by an estuary or arm of the sea, which forms the harbour, and united by a bridge thrown across the narrowest end of the piece of water, which widens in an irregular form, somewhat in the shape of a bottle. The lower part is called the Backwater, and from this, a considerable portion of the land on which Melcombe stands has been reclaimed, a process which is still going on.

The admirable situation of the harbour did not fail to render Weymouth a place of considerable trade at an early period ; and its commerce with France, Spain, and Newfoundland, long sustained the maritime importance of the town ; and in the time of Edward III. (1347), the quota of men and ships which it furnished was much larger than that of many ports which have since risen into importance.

In the reign of Henry VII. (1505), Philip of Castile and his Queen, going down the Channel from Middlebourg, with 80 sail of vessels for Spain, were glad to take refuge in this port from a heavy gale ; and when the fact became known to Henry VII., he sent down the Earl of Arundel with a troop of 300 horse to escort Philip on a friendly visit to London. The occurrence is remarkable, as leading to the ennobling of the Russell family, a gentleman of that name having, from his knowledge of the Spanish language, been invited to accompany the Royal party and to act as interpreter between the monarchs. Becoming, subsequently, a favourite at Court, and especially with the young prince, John Russell was created Duke of Bedford.

Another interesting fact connected with Weymouth, we gather from a MS. history of Dorsetshire, written by John Coker, and now in the British Museum, which states, that on the south side of Portland Island, the Spanish Armada made an attempt to land their supposed invincible army ; “but,” says the quaint historian “they were prevented by the English, and between them there began, in the sight of the whole coast, such a fight, that they were forced to acknowledge their army vincible, and to shift for themselves, though many hundreds of them came short home, and two of their great shippes, with a Don, brought into Weymouth.”

In the reign of James I., Weymouth was alluded to, as “a great and famous port, and as nourishing and employing a great number of mariners ;” but from this period the place may be considered to have been in a declining state until after the middle of the last century. It began to recover from its depression about the year 1763, when a gentleman of Bath, named Allen, brought it into repute as a bathing place. On his first visit to Weymouth, no bathing machine existed, and he was obliged to get one made for his own use ; but having greatly benefited during his visit by the pure mild air, his recommendation of the place soon brought other invalids in pursuit of the same objects, and the usual accommodations of a watering place speedily sprung up. In 1780, the Duke of Gloucester passed a winter at this spot, and subsequently built a house for his own

residence there. In 1789 George III. paid his first visit, and from that time, Weymouth became a very favourite resort for the Royal family. It was discovered to be the "Montpelier of England;" and the "plague of building lighting upon it," as old Fuller remarks, "it spread, until goodly rows of houses offered ample accommodation to the numerous visitors of so genial a resort for health and amusement."

The absence of all idle ceremony, the early hours, and simple, yet rational recreations which characterised the visits to Weymouth of the then Royal family, remind us forcibly of the habits of our own beloved Queen, either in her autumnal home at Balmoral, or during her sea excursions at all seasons. "At seven in the morning," we find, "George the Third, Queen Charlotte, and three of their daughters, starting from Windsor with a few attendants, in a cavalcade consisting of but three carriages, and proceeding by Winchester and Southampton to Lyndhurst Lodge, now called the king's house, in the New Forest, where they spent several days. At their entrance into the Forest, their Majesties received the homage of Sir Charles Mills, who holds the manor of Langley, upon condition of presenting the King, whenever he passes that way, with a brace of white greyhounds in silver collars, led in a silken cord, and coupled in a golden chain; a circumstance which seems to have afforded the young princesses great gratification."

During the residence of the Royal family at Weymouth, early hours became quite fashionable; for at six in the morning the King, Queen, and Princesses frequently made their appearance on the promenade, and at a time when most of the fashionable world in other parts of England might be presumed to be still enjoying their morning sleep, the Royal party were more than once on the sea-shore of Weymouth, watching the important process of "hauling the seine" (a fishing-net of great length, so called), and witnessing the interesting sight of from five-and-twenty to thirty thousand mackerel or herrings, struggling in captivity on the sands, and sparkling like jewels in the early sunbeams, a sight which still seldom fails to attract all the visitors of Weymouth, and enables those interested in natural history to gladly secure "many good specimens," the growth of deeper waters than the sea-weeds, *echinæ*, shells, &c., which are generally to be found on the shores of this neighbourhood.

The magnificent man-of-war and a frigate, which constantly rode at anchor for the purpose, took the Royal party on frequent excursions into the Channel, and from these they invariably returned to dine at four o'clock. Many stories are current of the King's affability towards the residents, of all classes, and one in particular we cannot forbear noticing: it is that of a poor man who had been confined for seven years in Dorchester gaol for a debt of 220*l.*, which His Majesty generously paid. The young Princess Charlotte was also a great favourite here, and especially among the naval officers and seamen, as she had a considerable partiality for ships and nautical matters, and often went on short cruises in the sloops, frigates, and line-of-battle ships that occasionally touched in the harbour, frequently braving a tolerably rough sea in an open barge, and ascending the ladder on the ship's side by the man-ropes, instead of accepting the chain which accommodated her attendants. The Royal family regularly attended the parish church, excepting once, when they honoured the officers of the "Magnificent" by being present at Divine service on board, a circumstance which gave rise to great preparation in order to receive the illustrious visitors with due and becoming respect.

Weymouth offers great facilities for sea-bathing, as the fine expanse of sand around the bay of Weymouth descends so gradually that at a distance of 300 feet from the shore, the water is not more than knee deep, while at the same time it is so firm and level that horses and carriages may be driven close to the water's edge. The semicircular bay, with St. Alban's Head in the distance, and Portland Isle towards the S. W., lies on the east of the esplanade, while terraces of fine houses lie on the west. Skirting the beach, and having flights of steps for ascending at convenient distances, is the Esplanade; raised above which is an embankment of masonry, forming one of the finest marine parades in Europe. On one side is a noble terrace of houses, on the other the ocean itself.

Distant from Weymouth between four and five miles is the mass of freestone called Portland Isle, though, in reality, it is but a peninsula, connected with the mainland by a ridge of pebbles, called Chesil banks. This bank extends nearly seventeen miles in a N.W. direction along the coast of Dorset, from which it is separated by an arm of the sea called the Fleet, thus forming one of the most extraordinary ridges or shelves of land in Europe, and perhaps the longest, if we except that of Memel, in Polish Prussia. Its average height is from fifty to sixty feet above the level of the sea, and its breadth varies from a quarter to half a mile; the pebbles of which it is formed consist, chiefly, of a white calcareous kind, but there are many of jasper, quartz, &c. They gradually diminish in size from the Portland end of the bank, to that which attaches it to the mainland, and are throughout so loosely thrown together, that the legs of a horse sink almost knee deep at every step. Several ingenious theories have been advanced to account for the formation of this curious work of nature, but they have been hitherto considered unsatisfactory. The consequence of this self-raised barrier, from the depths of the ocean, may be imagined, when its summit is reached, for it is capable of opposing the most furious tempest, and the neighbouring country probably owes much of its security to this wonderful bulwark of nature. Near the projecting peninsula of Portland, where these stones first touch the shore, they are the largest in size and least rounded in form; but as the drift of the currents, and the pressure of the ocean, continually drive them farther and farther in towards the bay, they become smaller and smoother, and are so reduced by constant attrition, that in a series of years masses of ten or twelve pounds will become little pebbles of an ounce each; and this diminution of size is so gradual, that the smugglers can, it is said, when landing upon the beach in a dark night, tell the relative distance from either extremity of this long neck, by the size of the pebbles alone. During a storm the breaking of the sea, and the commotion of the pebbles, form together an imposingly magnificent sight and sound. When a north wind prevails, the pebbles are washed away.

"It is a grand and interesting sight," remarks an old traveller, "to stand upon the topmost ridge of the isthmus and look to the western edge, where the waves roll in with such force as to wash the largest stones up to the farthest limit that the water reaches, keeping the whole mass in a constant state of attrition; and as far as the eye can reach, the surf having a line of snow-white foam in unbroken continuity. Then turning to the eastern side of the ridge to mark the even sandy slope which borders the perfectly smooth and tranquil bay." Occasionally, though, during a terrific gale, the waves have been known to ride over the whole ridge, and during the great storm of 23rd November 1824, a vessel of ninety-five tons, in the

service of the Ordnance, laden with heavy iron guns, and bound to Lough Swilly, was saved in a most extraordinary manner, by being carried over the beach in a tremendous sea, at the period of high water, and ultimately, by the exertions of the hardy islanders, the vessel was finally launched into the Swannery-fleet on the Weymouth side.

This Swannery-fleet receives the waters of several rivulets, and runs into the open sea at its south-eastern extremity, by a narrow channel, called Small-mouth. At its N.W. extremity it forms a swannery (whence it obtained its name), which contains sometimes seven to eight hundred swans, and is, with the ruins of the old Abbey at Abbotsbury, a great object of interest to strangers.

The want of a safe roadstead, or harbour of refuge, in the vicinity of Portland, led to the commencement of the breakwater now in progress, by which the beautiful bay included between Portland, Lulworth, and Weymouth, will soon be as effectually protected from the influence of the south-easterly gales, as it is already guarded by nature from every other quarter of the compass.

The breakwater, which extends a mile and a quarter in a N.E. direction from nearly the western point of the island, in about seven fathoms of water, has an opening of one hundred and fifty feet at a quarter of a mile from the shore, and shelters an area of nearly 1200 acres. The cost is estimated at about 500,000*l.*, an amount which would be utterly inadequate for the purpose at any other part of the British coast, and, when compared with the cost of the one at Plymouth, appears but inconsiderable. This however, is owing to the employment of convict labour, and the proximity of Portland Isle, which affords ample materials for the work in the "Capstone" from the quarries. This far exceeds the good building stone in quantity, and has hitherto been almost considered as rubbish. It is now found to be admirably calculated for the purpose of a breakwater, and thus the engineers have at hand an abundant supply of material which has scarcely any mercantile value, and which is taken from that part of the island constituting the property of the Crown.

The foundation stone of this important structure was laid by Prince Albert in 1848; and when His Royal Highness visited the spot in the summer of this year (1852), the breakwater had not only made a considerable appearance above the water, and well withstood the gales of the preceding winter, but had proved its usefulness during the long prevalence of the stiff east and south-easterly winds, which were so severely felt in the early part of the season at other parts of the coast; for, during this critical period, the water sheltered by the Portland breakwater was quite smooth, and the harbour rendered as safe as it is commodious. A squadron stationed at this spot will, in future, have under its protection, jointly with Dartmouth, all the intervening coast; and these places, with Plymouth, will complete the chain of communication between Dover and Falmouth, a distance of 300 miles.

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## OUR NATIVE SONGSTERS.



CHIFF-CHAFF.

FLOCKS of little birds may be seen in March, which will, as spring advances, fill our now almost silent woodlands with melodies. Among the earliest of our spring arrivals is the Chiff-chaff,\* or, as it is often called, Chip-chap (*Sylvia hippolais*). If its song is not remarkable for variety or richness, yet it is pleasing, because it reminds us that the singing birds which have sought in winter for a more congenial climate, are now coming back to their old haunts; and the notes which would hardly attract us amid the full chorus of song, are welcome now that song is scarce. This song is sometimes sung as early as the middle of March, and towards the end of that month is common. All the summer it is to be heard at intervals, and the hardly little bird lingers with us in some years till late in October, coming in company with the titmice and crested wren, to the gardens or fir plantations, and uttering its cheering notes often for many hours together, for some days previous to its departure. Sometimes this bird sings on the wing, as it darts across the garden path in search of insects, and at others it utters its strain from the high branches of the trees of those shady woods and thickets which it loves to haunt. Large gardens, too, furnish a favourite resort to the chiff-chaff, where it is most persevering, in spring, in clearing the aphides off the honeysuckles, rose-trees, and other bushes. And when in the latter part of March the golden balls of the willow-tree attract, by their sweet perfume, an occasional butterfly, a wasp, a bee, or some other winged creature, then our elegant little bird may be seen, as Mr. Knapp has said, itself almost like a coloured catkin too, chasing the insects right merrily around the willow, or other bough, or making its way to the orchard, not to eat the young buds, but to peck out the larvae of the different species of *tortrix*, which lie enfolded in their green coils. The gardener may welcome the bird there all the summer through, for neither apple, nor cherry, nor plum will tempt it to plunder, while it will clear the trees of the insects, and feed unsparingly on the

\* The Chiff-chaff is four inches and three-quarters in length. Whole upper parts ashy-brown; lower parts dull brownish-white, tinged with yellow; a pale streak over each eye; beak and feet dark brown.

small caterpillars, and the downy moths, and the gnats and emmets, which may revel among the trees, or grass, or flowers.

The chiff-chaff is, with the exception of the wheat-ear, the earliest of the spring visitors ; and it is the smallest of them all. Mr. Broderip mentions having received one in a cover, together with a written half-sheet of paper, franked by the penny stamp. The little bird becomes very tame in captivity, and shows great affection to its owner. Mr. Sweet, in his "British Warblers," mentions one which would take a fly from his finger, and would settle upon the hand which held a spoon filled with milk, of which it was very fond, following the person who carried it round and round the room, sometimes darting to the ceiling and bringing thence a fly. By degrees it became so familiar with its master, that it would sit and sleep on his knee as he sate by the fire ; and would never attempt to fly out of the room, even when the windows were open. Mr. Sweet wished to ascertain if it was willing to quit him, and tried to get it into the garden, but though its favourite spoonful of milk was offered as a persuasive, it was difficult to induce the bird to leave the room, and twice it returned thither. The third flight that it attempted, was to a small tree, from which it again came to taste the milk ; then it alighted on some chickweed ; then bathed, and betook itself to a holly bush to dry its plumes. Here, however, the little bird was lost among the leaves. Its master's voice seemed unheard, and most probably the impulses of its migratory nature came powerfully upon it. Perchance some strange instinctive longing for a warmer land, with its fruits and flowers, and gauzy insects ; some yearnings for companions, some restless desire for flight proved stronger than even its affection for its master, and away it went, to be seen no more, though all its species had long since departed, and were gone to see if November were less dreary in other lands than in ours.

The nest of the chiff-chaff is an oval structure, with a small aperture near the top. It is made of coarse dry grasses, externally coated with leaves, and lined with feathers. It is usually placed near the ground, in a low bush, or sometimes amid the thick grass on a bank ; and it contains six white eggs, speckled with purplish red at the larger end. John Clare, who knew so well the different objects which are to be seen by those who dwell in the country, has well described this nest. He calls the bird the Petty-chap, and it is well known to naturalists by the name of Lesser Petty-chap :—

" Well ! in my many walks I've rarely found  
 A place less likely for a bird to form  
 Its nest—close by the rut-gull'd wagon road,  
 And on the almost bare foot-trodden ground,  
 With scarce a clump of grass to keep it warm !  
 Where not a thistle spreads its spars abroad,  
 Or prickly bush, to shield it from harm's way ;  
 And yet so snugly made, that none may spy  
 It out, save peradventure. You and I  
 Had surely pass'd it in our walk to-day,  
 Had chance not led us by it ! Nay, e'en now,\*  
 Had not the old bird heard us trampling by,  
 And flutter'd out, we had not seen it lie  
 Brown as the road-way side. Small bits of hay  
 Pluck'd from the old propt haystack's bleachy brow  
 And wither'd leaves, make up its outward wall,  
 Which from the gnarl'd oak-dottedter yearly fall,  
 And in the old hedge-bottom rot away.

Built like an oven,—through a little hole,  
Scarcely admitting e'en two fingers in,  
Hard to discern, the birds snug entrance win.  
'Tis lined with feathers, warm as silken stole,  
Softer than seats of down for painless ease,  
And full of eggs, scarce bigger even than peas !  
Here's one most delicate, with spots as small  
As dust, and of a faint and pinky red.  
Stop ! here's the bird. That woodman at the gap  
Frighten'd him from the hedge : 'tis olive green.  
Well ! I declare, it is the Petty-chap !  
Not bigger than the wren, and seldom seen.  
I've often found her nest in chance's way,  
When I, in pathless woods did idly roam ;  
But never did I dream, until to-day,  
A spot like this would be her chosen home."

The chifff-chaff is also called the Dark-legged Petty-chap, to distinguish it from the willow wren, which it much resembles, though smaller, being however at once distinguished from it by the dark-brownish, almost black, colour of the legs and feet. Mr. Blyth remarks, that there is a peculiarity in its song not generally noticed : its common note, tick, tack, is known to us all ; but this gentleman remarks, that after repeating this, seven or eight times in monotonous succession, it frequently alternates it with another sound, resembling erah, erah, or cruh, reminding one of the harsh tones of the Reedlings.

The Scotch have an old proverb respecting small people,—“ Little folks are soon angry—their heart's near to their mou’ ; ” and it might be quoted in relation to this tiny bird, which is of a most quarrelsome disposition, even daring to attack birds much larger than itself. The writer just alluded to, remarks, “ Last spring I was walking under some tall elms, from the top of which a chifff-chaff was, at intervals, repeating his double cry. A large common, overspread with furze, lay in one direction, while thousands of the song petty-chaps were warbling merrily. At length one of these settled on a bush close under the trees, and began to sing ; whereupon down came the little chifff-chaff from above, and I witnessed a long-sustained battle between the two, both warbling their diverse notes in defiance, and by turns attacking and pursuing each other. Each indeed seemed to consider the other an antagonist of its own species, for it is seldom that different species quarrel, though a few will drive away all intruders from their abode.” This writer adds, that there are, however, several allied species, which seem quite to regard each other as enemies, as the robin and red-tail, the whin and the stone-chats ; and these will quarrel with each other, though amiable enough with birds less nearly allied ; and on this principle the different kinds of petty-chaps are very apt to fight in captivity.

Another early bird among our summer visitors is the Willow Wren\* (*Sylvia trochilus*), called also Yellow Wren, Haybird, Garden Petty-chaps, Huck-muck, or Ground Wren,—the last name alluding, doubtless, to the place of its nest. The song of this bird may be heard in April, and is very loud and clear, making the woods to echo with the sound. A writer in the “ Magazine of Natural History” remarks,—“ Its song, if

\* The Willow Wren is about five inches in length. Upper parts dull olive, more brown on the wings and tail ; under parts whitish, tinged with yellow, except on the belly ; a pale streak over each eye : legs and feet pale brown.

deserving of that name, has never been properly described in our works of natural history. It consists of whistling notes, which it runs through the gamut of B, thus comprising ten notes: the latter ones are very soft, and run into each other; and though it would thus appear anxious to be well grounded in the principles of music, by thoroughly and constantly practising the gamut like a true musician, yet it never arrives at greater musical perfection; and its notes, though soft and melodious, are not sufficiently diversified to merit the name of song."

This is a common bird in shrubberies and hedgerows in all parts of Britain, except in the counties of Cornwall and Devonshire. Sometimes its song is to be heard as it wings its way among the trees from bough to bough; at others it is sung while the little bird is perched on the summit of some high tree, or sits among the yellow furze or broom of our heath lands. A merry bird it seems,—all life and animation, hopping over the ground in search of insects, or catching them on the wing, and passing by the garden fruits with indifference, save where they serve as an attraction to insects, and thus afford a meal. When in captivity, this bird soon becomes familiar, and sings long and loud; and it has been known to enter the open windows of houses, and to fly about the room for some time, occasionally uttering a little sharp note. The willow wren quits us in September, and sings a little in autumn, but not with the vigour or joy of spring.

The nest of this bird is composed of grasses, mosses, and dried leaves, and lined with feathers. It is of an oval or rounded shape, having a small opening near the top, and containing six or seven eggs, which are white, spotted with reddish brown, the spots being most numerous at the larger end. It is usually built in May, and is concealed among the moss or grass of the hedge-bank.

An interesting account of the attachment of the willow wren to its nest, is given by a lady who writes thus in the "Field Naturalist"—"In the spring of 1832, walking through an orchard, I was attracted by something on the ground in the form of a large ball, and composed of dry grass. I took it up in my hands, and upon examination, found it was a domed nest of the willow wren. Concerned at my precipitation, I put it down again as near the same place as I could suppose, but with very little hope that the architect would ever claim it again after such an attack. I was, however, agreeably surprised to find next day that the little occupier was still proceeding with its work. The feathers inside were increased, as I could perceive by the alteration in colour. In a few days two eggs were laid, and I thought my little protégé safe from harm, when a flock of ducks that had strayed from the poultry-yard, with their usual curiosity, went straight to the nest, which was very conspicuous, as the grass had not grown high enough to conceal it, and with their bills spread is quite open, displaced the eggs, and made it a complete ruin. I now despaired; but immediately, on driving the authors of the mischief away, I tried to restore the nest to something like its proper form, and placed the eggs inside. That same day, I was astonished to find an addition of another egg, and in about a week, of four more. The bird sate, and ultimately brought out seven young ones; but I cannot help supposing it a singular instance of attachment and confidence, after being twice so rudely disturbed."

THE SPIDER—AS AN EXAMPLE OF PERSEVERANCE (*continued*).

THIS surprising proof of perseverance in overcoming difficulties is worthy of being kept in remembrance. It is an example that may be as useful to us as a less remarkable one was to Robert the Bruce. Scarcely less interesting is Mr. Blackwall's account of the gossamer spiders. These are the little creatures that make those floating webs seen in the air, or covering the surface of the ground, about the month of October. Several of these spiders were put on a small branched twig, placed upright in an earthen vessel of water. Whenever the insects were exposed to the slightest current of air, they directly turned themselves towards the quarter whence it came, and, elevating their spinners, they sent out a small portion of glutinous matter, which was instantly carried by the air into a line consisting of four finer lines. The spiders, in the next place, carefully ascertained whether their lines had become firmly attached to any object or not, by pulling at them with the first pair of legs; and if the result was satisfactory, after tightening them sufficiently, they made them fast to the twig; then applying their spinners to the spot where they stood, they discharged a little more liquid gum, and committing themselves to these bridges of their own constructing, they passed over them in safety, drawing a second line after them, as a security in case the first gave way, and so effected their escape.

Such was invariably the result when spiders were placed where the air was liable to be sensibly agitated; but on covering them over with a glass shade, they remained in this situation during seventeen days, evidently unable to produce a single line by which they could quit the branch they occupied without encountering the water at its base; though on the removal of the glass they regained their liberty with as much speed as in the before-mentioned cases. Mr. Blackwall tried the same experiment with several geometric spiders, and always with the same success.

Another ingenious observer, Mr. Rennie, has recorded a series of experiments bearing upon the same point. He placed several spiders in empty wine-glasses, set in tea-saucers filled with water. When they discovered, by repeated descents from the brims of the glasses, that they were thus surrounded by a wet ditch, they all set to work to throw their silken bridges across it. For this purpose they first endeavoured to ascertain the direction of the wind, or rather which way any current of air set (as the experiment was tried in a room), by raising their arms as seamen are accustomed to do in calm weather. But it will be sufficient to notice the proceedings of one of the little band of prisoners, which was a gossamer spider.

Finding no current of air on any quarter of the brim of the glass, it seemed to give up all present hopes of constructing its bridge of escape, and placed itself in the attitude of repose, prepared to wait in patience for a breeze; but no sooner did Mr. Rennie produce a stream of air by blowing gently towards its position, than the little animal was up and stirring; it instantly fixed a thread to the glass, and laying hold of it with one of its feet by way of security, it placed its body in an upright position, with its spinnerets extended outwards; and immediately a thread was seen streaming out from them several feet in length, on which the little aeronaut sprang up into the air, and thus escaped.

In the formation of their nets spiders are regulated chiefly by the sense of touch, which they possess in high perfection.

"The spider's touch, how exquisitely fine ;  
Feels at each thread, and lives along the line."

They find out when they have the full number of rays by going to the centre and touching each in succession with the feet, supplying deficiencies wherever they are perceived. They also construct their snares as well in the dark as in the light; for spiders having been shut up in glass jars and placed in the dark, produced during their captivity nets of admirable workmanship.

The silken lines of the web are of various degrees of strength and elasticity; the rays and marginal lines have but little elasticity, but the viscid line possesses it to a remarkable degree, and is thus adapted to the frequent and rapid changes in distance that take place among the rays when the net is agitated by winds or other disturbances, while the insects that fly against it are more completely entangled than they otherwise could be without doing extensive injury to the framework of the snare. That they may find out whether the entangled flies are alive or dead, the geometric spiders pull the rays with their feet, and suddenly letting go their hold, produce by this means a vibratory motion in the net which seldom fails to rouse such insects as are ensnared. Guided by the struggles of her prey, the spider runs along the nearest ray to seize her victim, avoiding any contact with the viscid line as much as possible, and drawing out after her a thread attached to one of the lines near the centre of her net, which helps her return.

As the spider cannot pursue her prey, she has to exercise patience in waiting for what chance may bring to her net. Even in the busy insect districts of the fruit and flower garden, the geometric spider has often to undergo a long fast. Wet and windy weather may destroy all her webs, and prevent her from spinning others, perhaps for weeks; during all which time she is without food. And when at length a new net is formed, or the old one repaired, some bee or wasp, or large fly, too strong and bulky for the little geometrician, may get entangled in the snare, and reduce it to ruin in its efforts to escape. But all these accidents do not disturb the temper of the patient spider. She sits watching, without ever moving, until the lucky moment arrives when a manageable fly is caught. She is then all activity, and uses her utmost skill to prevent escape. If the insect be of small size, the spider conveys it at once to her hiding place; and having sucked out all the juice, throws out the carcase. If the insect should be too large to be directly attacked, the spider nimbly and skilfully coils a number of threads round its body in various directions, securing both its wings and legs; it is then conveyed to the den, and devoured at leisure.

Mr. Darwin notices a large spider common about Rio de Janeiro, which, when any large insect, such as a grasshopper or wasp, is caught, quickly gives it a revolving movement, and at the same time emits a band of threads from its spinners, thus enveloping its prey in a case like the cocoon of a silkworm. The spider now examines its powerless victim, and gives the fatal bite on the hinder part of the neck, and then retreating, it waits patiently until the poison has taken effect.

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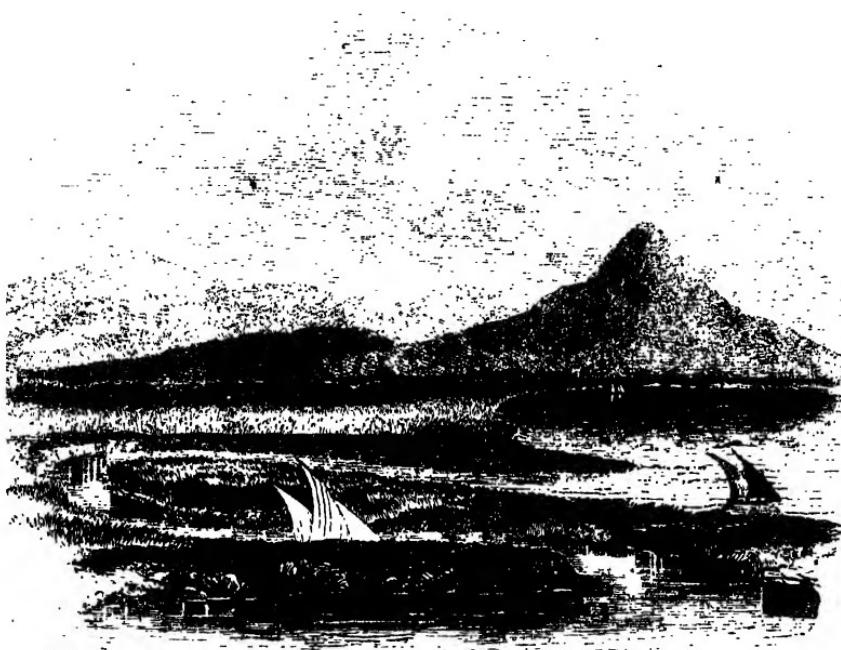
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SEA-GOAST AND SHORES OF CILICIA, &c. (*continued*).



SUEDIA, THE ANCIENT SELEUCIA.

HIGH above the pleasant blue waves of the surrounding ocean, in stately but solitary majesty, rises the lofty and sharp-peaked Cassius. Not a speck in the clear horizon interferes with the navigator's survey of the west. There lies the peaceful Mediterranean, like one huge mirror left there expressly to reflect the transcendent brilliancy of the morning sun. To our left are the pleasant hills and dales and glens, and rocky promontories, so green with Spring's verdure, so redolent of nature's bounty, so variegated in form and shape; and, when all combined, constituting so exquisite a master-touch of skill, so perfect a picture of what God's loving bounty to man has been when

He gave him in His infinite mercy such lovely spots, such Edens to dwell in upon earth. There is something exhilarating in the air we breathe, something congenial in the prospect around us, which invites the soul to song and thankfulness. No wonder that poetry was the language of the land, and that the inspired Psalmist, after gazing on such-like scenery, should tune his lute and sing songs of praises to that Great Beneficent Being who first created them :—

“ How various, Lord, thy works are found  
For which thy wisdom we adore !  
The earth is with thy treasures crown'd  
Till Nature's hand can grasp no more ;  
But still the vast unfathom'd main  
Of wonders a new scene supplies.” (Psalm civ. 24, 25.)

And now, as our proud vessel speedily nears the shores, urged over the tranquil seas by the light breath of the early morning breeze, fresh scenes invite the attention. Yonder before us, skimming over the waters like a storm bird, is a little Arab feluccah. In just such another boat, in all probability, eighteen hundred years ago, the Apostles Paul and Barnabas (Acts xiii. 40) left yonder self-same river, and the then flourishing city of Seleucia, bearers of joyful tidings; first missionaries of the glorious Christian faith to the benighted sons of the island of Cyprus,—that island whose shores were dimly visible from our decks as we crossed over from Tarshish last evening. Our vessel has anchored just under the lee of the lofty Cassius; before us is the Orontes, meandering amidst a wild profusion of olive trees and mulberries, her banks thickly clustered with wild myrtle and thyme. As she glides gently into the mother ocean, everything is hushed; there is no hum of human voices, no busy stirring scene of every-day life, and from where our ship lies not even a human habitation to be seen. Such is the Suedia of the present day, as seen from the shipping in the wide and beautiful bay formed by the Gulf of Antioch. How different from the splendid city of Seleucia in Paul's time, of which now hardly a vestige exists!—a city in whose extensive and well-secured harbour fleets of richly-laden vessels annually sought refuge from the fierce winter storms that raged along the coast.

We landed in the ship's boat, which was safely guided over the rather dangerous bar at the mouth of the river by an experienced native pilot. After several bends and windings, all which are rapidly passed, aided by the smoothness of the Orontes and a small lugger sail, we eventually reached the custom-house quay. A miserable collection of mud hovels were built upon this spot, and we felt sadly disappointed, being under the impression that this was all that remained of the city of Seleucia. Being provided with horses, we mounted and followed our guide, skirting the deep banks of the beautiful Orontes. After half a mile's riding we were agreeably surprised on arriving at a slight eminence by catching a glimpse of the veritable Suedia, close to our feet; and far as the eye could stretch was one interminable range of richly-cultivated meadows and fields, through which the river flowed in a very serpentine course. Beyond these meadows was a dense forest of mulberry trees and fruit orchards; the variegated hue of their green foliage being admirably set off by the graceful dark-leaved poplar, and interspersed with several tall hillocks, up whose sides grew wild myrtles and blackberry bushes, and whose summits were crowned by a cluster of stately olive trees. Passing over the meadows, we entered upon the picturesque lanes which intersected the plantations in all direc-

tions: there was no highway, so that we were utterly at the caprice of our guide. Following this man's horse, we rapidly passed plantation after plantation; they were all secured by thickly-set hedges, amongst whose branches wild vines and sweet-scented creepers were twined in the wildest confusion, and the whole air was scented with odours of delicious flowers. Ever and anon, as we passed the rudely-constructed gateway which formed an entrance to the orchards or mulberry gardens, we caught sight of the humble but cleanly dwellings of the peasants belonging to each proprietor. These houses were all long and low, and mostly covered in with tiles; opposite to the entrance doors were neatly-swept spaces, where groups of men, women, and children were seated on the ground, each following his or her occupation; some women were plying the distaff, some were busily occupied in sifting wheat, whilst some again were knitting stockings for the next winter's wear. The men and boys were mostly at work gathering the leaves from large piles of branches lopped freshly from the mulberry trees; these were preparing the morning's meal for the stock of silkworms under their several charges, and they had need be attentive to their welfare, for from these silkworms mainly do the natives derive their support. How wonderful is God's mercy, to have created this active little worm, from whose labours thousands derive support, hundred of thousands comfortable and comely clothing! These pleasant family groups were usually seated under the shade of some lofty black mulberry trees, the leaf of which is not serviceable for the use of the silkworms, but they yield them delicious fruit and a pleasant shade; and in autumn, when the leaves fall, these are carefully collected, and stored up to feed the goats with in the winter season.

All the natives appeared to be healthy, for the climate is reckoned the finest in the world; and they all seemed happy and contented. Under the large apricot trees that were planted at the backs of the native huts, cocks and hens were congregated, busily picking up such fruit as was blown down by the passing gusts of wind; and in this occupation they were uninterrupted, because the morning's supply of fruit had already been collected and disposed of, and there was abundant supply to meet the wants of both the men and the birds. Sometimes an angry-looking cur would rush out from behind the hedge, and annoyingly snap at the heels of our horses; but these noble animals treated such invaders with superlative contempt,\* and the dogs were speedily called off by the natives, who were in every sense civil and obliging. As we progressed, we passed a knot of young men and women congregated round one of their number, who was reading to them from a book. This was a sight new to us in the East; and as the auditors, from their exclamations and gestures, seemed evidently surprised and deeply interested, we were determined to dismount and inquire into the cause. On fulfilling our intentions, we were gratified and surprised to discover that the young reader was occupied with that beautiful parable in Scripture of the "vineyard-planter who had let his vineyard to husbandmen." (Luke xx. 9.) The text he read from was Arabic; the subject well suited to the understanding of this simple people, and we blessed God to find that what Paul had sown, nearly two thousand years since, was still nourished, though a tender plant, in the understanding of these Syrians.\*

\* This practice of reading to each other we afterwards found to be a common practice in both Suedia and Antioch, but particularly in the former spot, where only, on an average, one out of a hundred could read; and such a one's talents were often put into requisition by his more ignorant neigh-

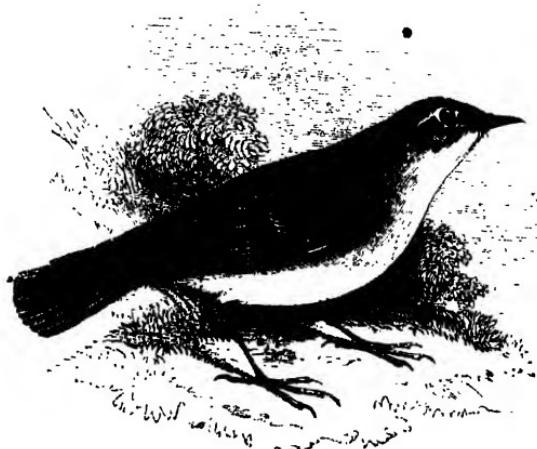
After we had conversed with these young people for a short time, we expressed a desire to be shown over one of the *Khoks*, or mud buildings, set apart expressly for the rearing of the silkworm: they readily complied with our request, though a prejudice exists amongst the more ignorant that not many strangers be admitted. We were shown into a long high building, built of sun-dried bricks, made impervious to the rain by thickly-thatched coverings—at the same time that the air was freely admitted through large windows roughly trellised in with thorns and myrtle twigs. The length of this room was about fifty feet, and its breadth perhaps thirty; in the centre and on the two sides were a number of matwork shelves, which reached up to the top of the khok; between each shelf a space of two feet intervened, and on these shelves, as thick and busy as possible, were the silkworms of the proprietor—hundreds of thousands of these creatures, all occupied in eating the leaves which had been freshly supplied, and the singular noise occasioned by the process of mastication resembled the incessant clipping of a pair of scissors. It was marvellous to see with what celerity they denuded a leaf of its foliage, leaving an anatomized skeleton, in which every little fibre had been carefully preserved. The manure of these creatures, and what was left of leaves, &c., was carefully swept into a corner, and there heaped up to serve as fodder for the oxen in winter. Nothing was without its intrinsic use and value. Well might Paul exclaim, “*Oh, the depth of the riches of the wisdom and knowledge of God!*” (Rom. xi. 33.) After partaking of some refreshment, chiefly consisting of delicious fruits, both fresh and dry, we mounted our nags, and were conducted, after an hour’s ride, to a village called Moghair, built on the actual site of ancient Seleucia. Judging from the aspect here, Seleucia must have occupied the most charming position imaginable. We were in one of a long narrow range of gardens of delicious fruit-trees: on one side of us the sea beat fiercely against the ruined breakwater of centuries past; on the other, steep mountains, laid out like a giant flight of steps—one garden on the top of the other. Crowning all this, once stood the city of Seleucia, hundreds of foundations being still visible, besides ruins of the city walls; and on one side of the hills, what is now a vast swamp, was, in the time that the Scleucidæ flourished, a celebrated dockyard for shipping. Some parts are still in *status quo*; and the opinion is that with very small expense the place might be repaired. The most wonderful work of human enterprise and perseverance is the tunnel aqueduct on this spot, which passes under the hills for several miles, and was doubtless originally intended for what it now serves, viz., as a channel to carry off the heavy rains and snow which fall during the winter on the neighbouring mountain-tops, and which, but for this channel, would undoubtedly inundate the plains on either side, creating much devastation amongst the Armenian peasantry.

The population of Suedia is estimated at about 7,000 souls, of whom half are Christians of the Greek church. No two houses of the whole village are built within two hundred yards of each other. The book of Maccabæus is supposed to have been written in Seleucia, where Cleopatra, the wife of Demetrius Nicanor, lived, when her husband was a prisoner in Persia.

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bours. The Greek priests at Suedia were a simple-minded, devout, but ignorant people; and it is much to be lamented that both in this place and at Antioch we have no missionary—one who might combine the medical with the clerical.

## OUR NATIVE SONGSTERS.



WOOD WARBLER.

THE Wood Wren,\* or Wood Warbler, or Green Wren (*Sylvia sylvicola*) is the Willie Muftis of the Scotch peasant. It is a larger bird than either the chiff-chaff or the willow wren, but so similar, that until recently the three species have not been clearly distinguished from each other. Its notes are not so sweet as those of the last-named bird, but are more like the chirpings of the merry grasshopper. First, the strain commences with the sounds of "twee, twee, twee," oft repeated, and sounded very long; then follow the same sounds, uttered with great rapidity, and accompanied by a vibration of its wings. The song is usually sung from the summit of some old oak or beech; for it is in old woods, where the trees are thick and high, that this bird chiefly delights to dwell. It arrives in England at about the end of April, and leaves us in September; and it may be heard singing its shrill song almost all the summer, sometimes uttering it on the wing. Unlike most of our singing birds, it does not moult in autumn, but remains in its old plumage, and migrates without resigning its plumes.

This bird is very skilful in catching insects, either while on the wing, or when searching for them diligently in the crevices of the bark, or among the foliage of trees. It conceals its domed nest so cleverly, as that only an experienced bird-nester will find it out; but it may be distinguished from the very similar nests of the allied species, by the absence of feathers on the inside, it being invariably lined with fine grass and hair. Wordsworth's verses well describe it:—

"So warm, so beautiful withal,  
In perfect fitness for its aim;  
That to the kind, by special grace,  
Their instinct surely came."

\* The Wood Wren may be distinguished from the Willow Wren by having the upper parts of a brighter green, the eye-streak, the throat, breast, and flanks, clear yellow; and the belly pure white.

" And when for their abodes they seek  
 An opportune recess,  
 The Hermit has no finer eye  
 For shadowy quietness.  
 " Oft in sequester'd lanes they build,  
 Where, till the bird's return,  
 Her eggs within the nest repose,  
 Like relics in an urn."

The eggs of this bird are six in number, and have a white ground, which is, however, almost hidden by numerous spots and speckles of dark purplish-red or ash colour.



DARTFORD WARBLER.

The rare Dartford Warbler\* (*Melizophilus Dartfordiensis*) sings as early as the month of February, and for its sweet, though hurried song, deserves mention among our singing birds. It is somewhat weak, but very pleasing. This bird is often called the furze wren, because it is among the spring boughs and golden blooms of that plant that it sings and builds. It is a very shy bird, and when the voice or footfall gives token of an approaching rambler over the downs, it retreats before him, passing from bush to bush with wonderful alacrity and skill, so that it makes an almost certain escape. It hides its nest, too, in the very thickest part of the bush, concealing it so well that few could find its tiny eggs of white hue, spotted at the larger end with grey and yellowish brown.

This bird frequents open bushy heaths and commons, and sings its song while quivering over the furze or broom; or it darts along on eager wing to catch the insects which have come thither to sip the honey from the fragrant flowers. Here, too, it gathers the dried grasses or the long stalks of goosegrass, of which it fabricates its nest, entwining them with young and tender branches of the furze, and adding to the fabric a clump of wool which has probably been torn from the coat of some sheep which came too

\* The Dartford Warbler is about five inches in length. Upper plumage generally greyish-black, approaching to brown on the wings and tail; throat, breast, and sides chestnut, speckled with white on the chin; belly white; beak black, with pale edges; feet pale brown.

near to the prickly branches to find its meal. The whole length of the bird is rather more than five inches. In Provence, where it has been observed to frequent cabbage gardens, it is called *Pitte-chou* or *Pitt-chou*. Its English name was given because it was first remarked at Bexley Heath, near Dartford, in Kent, in the year 1733.

A writer in Loudon's Magazine of Natural History, well known to the readers of that work by his valuable contributions under the name of Rusticus of Godalming, says that this bird is very common in his neighbourhood, though almost unknown in other districts. His characteristic description of the bird is too good to be omitted. "If," says this writer, "you have ever watched a common wren (a kitty wren we call her), you must have observed that she cocked her tail bolt upright, strained her little beak at right angles, and her throat in the same fashion, to make the most of her fizgig of a song, and kept jumping and jerking and frisking about, for all the world as though she was worked by steam; well, that's the precise character of the Dartford warbler, or, as we call it, the furze wren. When the leaves are off the trees, and the chill winter winds have driven the summer birds to the olive-gardens of Spain, or across the Straits, the furze wren is in the height of his enjoyment. I have seen them by dozens skipping about the furze, lighting for a moment upon the very point of the sprigs, and instantly diving out of sight again, singing out their angry impatient ditty for ever the same. Perched on the outside of a good tall nag, and riding quietly along the outside, while the fox and hounds have been drawing the furze fields, I have seen the tops of the furze quite alive with these birds. They are, however, very hard to shoot; darting down directly they see the flash or hear the cap crack, I do not know which. I have seen excellent shots miss them, while rabbit-shooting with beagles. They prefer those places where the furze is very thick, high, and difficult to get in."

This bird has been found in Surrey, Devonshire, Cornwall, and Kent, and is believed to remain with us throughout the year. Its food consists of various insects.

Smaller than any other bird whose song gives music to our spring woods, is the delicate Gold-crest,\* or Gold-crested Wren, or Marigold Finch, as it is sometimes termed (*Regulus auricapillus*). Its length is about three inches and a' half, and its weight no more than seventy-five or eighty grains. It is called also kinglet; and its Latin name *Regulus*, signifying also a little king, was evidently bestowed in consequence of the soft silky feathers of its head, which are orange-coloured in the centre, shading off, on the sides, to a delicate yellow tint. A stripe of black runs along each side of the crest, and contrasts beautifully with the gayer hue. The beauty, both of colour and form, of this little bird is extreme, and its movements are most agile and graceful, no bird being more active than this. Now the gold-crests whisk through the dark branches of the fir-trees, like so many sylphs; now they hang hovering over a flower, singing all the while their melodious notes; and again they may be seen clinging, indifferently, in all positions, to the boughs, sometimes with their feet upwards. Being so small as that a leaf may cover them, they are often hidden by the verdant screen of summer; though when the wind is sighing through the bare branches of

\* The Gold-crest is three inches and a half in length. Upper parts yellowish-olive; wing blackish, crossed by two narrow bands of white, and a broad interrupted one of black; crown-feathers bright yellow-tipped with orange, the crown bordered with black; under parts yellowish-grey; beak black; feet brown.

winter, they may be seen gathering in small companies, looking diligently into the crevices of the bark, or betaking themselves to the greener fir-trees for a shelter, most closely inspecting every twig for the insects which swarm on the trunk and among the foliage of the dark yew-tree, or the towering pine. From their being so easily secreted among the leaves, some writers have thought the gold-crests less abundant in our island than they are now known to be. They appear to be very general in the northern parts of Britain, haunting especially the somewhat moist woods where the beech and fir overtop the growth of brambles and other underwood at their base, nothing seeming to delight them so well as the sombre foliage of the cedar, the yew, and the pine.



GOLD-CREST.

It seems wonderful that so delicate a bird can brave the severity of our winters, and it can only be by means of its incessant activity that it can do so. The usual number of gold-crests is greatly increased in autumn by the arrival of others which come to pass the winter here; and it appears highly probable that, in some seasons, some of our gold-crests migrate into other lands. Though when in our woods they scarcely make a longer flight than from tree to tree, these little creatures can brave the winds of ocean, sometimes settling on the tackle of the ships which are sailing across the waters, and being taken up in great exhaustion. Mr. Selby saw thousands of kinglets arrive on the sea-shore and sand-banks of Northumberland, after a very severe gale, in October 1822. The poor little birds were so fatigued, either by the length of their voyage, or by an unfavourable turn of the wind, that they were unable to rise from the ground, and large numbers were consequently taken and destroyed. In another case mentioned by the same ornithologist, in January 1823, a few days previous to a long-continued snow-storm in Scotland and the North of England, all the gold-crests, natives as well as strangers, had entirely disappeared from those districts, nor did any return, on the approach of spring, to the haunts which they were wont to enliven by their presence.

Though this bird is enabled, by means of perpetual exercise, to guard against the extreme cold, and though it finds a way to secrete itself in places where frost cannot reach it, yet it seems likely that many gold-

erests perish in our most severe winters, notwithstanding their bustling activity and resources. The Hon. and Rev. W. Herbert says, that in confinement the least cold proves fatal to them. This gentleman once took half a dozen of these golden wrens at the beginning of winter; they became exceedingly tame, and thrrove well upon eggs and meat. "At roosting-time," he observes, "there was always a whimsical conflict among them for inside places, as being the warmest, which ended, of course, in the weakest going to the wall. The scene began with a low whistling call among them to roost, and the birds on the extreme right and left flew on the backs of those in the centre, and squeezed themselves into the middle. A fresh couple from the flanks immediately renewed the attack upon the centre, and the conflict continued till the light began to fail them." A severe frost in February killed all but one of them in a night, though in a furnished drawing-room. The survivor was preserved in a little cage by burying it every night under the sofa cushions; but having been one sharp morning, taken from under them before the room was sufficiently warmed by the fire, though perfectly well when removed, it was dead in ten minutes."

White has remarked that the golden-crested wren will stand unconcerned till you come within three or four yards of it. Yet, though not of a mistrustful nature, the little bird is really very timid on the approach of actual danger. If the bough on which it is sitting is struck sharply with a stick, it immediately drops to the ground from terror, and is often taken up dead. Those who require it for a preserved specimen, find this a better mode of taking it than with a gun. In our country the bird is not an article of food, but, small as it is, it is eaten on some part of the Continent; and Montbeillard tells us that the markets of Nuremberg abound with this little gold-crest, great numbers being taken in the environs of the city, by means of the bird-call. They become very tame in confinement, though their small size enables them sometimes to creep through the meshes of a net, and make their escape. Their notes are sweet and pleasing, though not strong. They have little variety, and the strain terminates abruptly. Nor is the nest of this little bird less remarkable for beauty than is the bird itself. This is very large in proportion to its architect, and has very thick walls, composed chiefly of green moss fashioned into a cup-like form, well interlaced with spiders' webs, and covered over at the top, save where one aperture admits the bird. The inside might rather be said to be filled than lined with feathers, so plentifully does the bird place them for the warmth and comfort of her young; and the dwelling is slung, like a hammock, beneath the bough of the yew, or cedar, or larch-tree, or sometimes placed among the ivy. The gold-crest would seem to love well the shadow of green boughs, for it often hangs the nest in such a manner as that a sweeping branch shall fall over it, screening it alike from the hot sun and the eye of the passer-by. The eggs are from seven to ten in number, and of a pale-yellowish brown.

The gold-crest is very generally distributed over the southern counties of England, and is plentiful in Wales. It is also common in the counties on the north of London.

## THE SCHOOLFELLOWS.



The boys of a large school in London had just been dismissed for the day, and, full of glee at their emancipation, they were bounding away through the street to their different homes. Some of the elder ones walked gravely and steadily along, to be sure, conversing on their studies of the morning ; but the sun was bright, and the air balmy, and most of the happy youngsters were soon in the fields, displaying their strength and activity.

London then was not what it is now ; for it is many, many years ago of which I speak, and meadows then occupied the place on which most of our principal streets now stand. But though the day was so inviting, and the school hours over, yet the rough benches in the school-room were not quite deserted. There still remained three boys, studying. One, certainly, appeared to be thinking of his play more than of the book which he held carelessly in his hand ; his merry glance was now through the window, now on his companions, and on hearing the distant shouts of his playmates, he first smiled, then, with a sigh, turning to his book, muttered to himself, "Oh ! this tiresome lesson ! " His name was Henry Romild.

On the next bench to him was seated a boy of a different character, as might be seen by the steady perseverance with which he again and again perused the task assigned him. He had not so bright and intelligent a

look as Henry had, but he seemed like one who would not be conquered by a few difficulties. His name was Hugh Bardyll.

The third boy was different to both the former. Handsome and intelligent-looking in a high degree, he was pursuing his studies with a fixedness of attention that nothing could distract. A single glance at his countenance showed that he possessed talents of no mean order, while the intensity of application which he evinced as a boy gave promise of no ordinary character. Not once looking up from the book with which he was so deeply engaged, his dark eye occasionally flashed with triumph and delight as he conquered some difficult passage in it. At length, after an hour's hard study, he smiled, and closed his book with a look of satisfaction. "What, are you here still, Hugh and Harry?" he exclaimed, looking round; "I thought I was alone."

"Yes, we are," said Henry, coming forward; "I was obliged to stay and learn this stupid lesson, and I believe Hugh has something to do; but how *you* can stay for a whole hour in this dull room, of your own free will, Thomas, is far more than I can understand. I have been wondering at you for the last half hour; what pleasure *can* you find in poring over those old books?"

"Pleasure!" answered Thomas Becket, for that was the name of the boy who hereafter was to make such a conspicuous figure in English history, though at present only known as the son of an industrious citizen of London; "pleasure! I delight in it, Harry! I have just conquered a passage which has been puzzling me all the week, and which the master himself could not quite understand. Do you think there is no pleasure in that?"

"There certainly is a satisfaction in so doing," said Hugh Bardyll, gravely, as he took his seat near Thomas Becket; "though I confess I do not feel the delight in study which you do. Still I think nothing great can be accomplished without perseverance, and as I hope to be, like my father, a steady, persevering man of business, I was determined *not* to be daunted by a Latin lesson. He tells me, my character is forming every day, and if I can but resemble him, and make as thriving a business as he has, I shall be content."

"Shall *you*?" said Becket, with a smile of something like scorn; "I confess *my* ambition soars a little higher than that. I should not like to be kept to my father's trade all my life; no, I love learning, and will distinguish myself. I must be something more than a mere citizen of London, if talents and perseverance will effect it."

"Well; how you two do talk!" exclaimed Harry Romild; "our fathers are all in trade, all good citizens and true. They will all give us something very comfortable to set us up in business, and what more can you wish? For my part, I shall keep my perseverance till I want it, and not waste it over a trumpery lesson. I intend to enjoy myself as long as I can, and not work till I am actually obliged to do so; and I dare say my trade will be quite as prosperous, and my name as high in the city, as either of yours, with all your talents and plodding."

"I don't know that, Harry," said Bardyll; "habit is second nature, and you must imitate your good father's industry, if you would keep up your father's business. By the bye, Thomas, you must inherit your perseverance from your mother; is there not an interesting story told of the way in which she surmounted every obstacle to rejoin your father?"

"There is," replied Becket, proudly; "I will relate it to you. My

father, being with the English army in Palestine, was taken prisoner, and became the slave of a rich Mussulman. This Mussulman had a daughter, who was permitted to converse with the captive, and who first pitied, then loved him. My father returned her affection, and after a time she furnished him with the means of escape. He found it impossible to take her with him, and arrived in England in safety, but alone. When here, his thoughts often wandered to her who had rescued him from a disgraceful captivity, and he wished that he could hear some tidings of her. Months, however, passed away, and no news arrived; when one day he was attracted to the window by an unusual bustle, and hearing the word 'Gilbert!' 'Gilbert!' pronounced several times. On looking out, he perceived a crowd of people surrounding a female dressed in the Eastern fashion, who, as she walked slowly along the street, incessantly repeated the word 'Gilbert.' He instantly recognised her; it was the Mussulman's daughter; and flying to her, she beheld, with a transport of joy, the Gilbert she sought. You are aware that Gilbert is my father's Christian name, and the only one by which she had known him. When brought to his house, with wondering joy he inquired how she had found her way to England. She said that having contrived to elude the watchful vigilance of her father, she fled, and got on board a vessel sailing for England. The only two English words she knew, were 'London' and 'Gilbert'; by constantly repeating the former, the captain of the vessel understood her wish of being conveyed thither, and to London she came. But when she had arrived, she knew not the name of the street where her lover resided; her only resource was to walk through one after another, pronouncing again and again the word Gilbert. A crowd collected, their curiosity became excited, but to all their questions she had but the one answer, 'Gilbert.' Her constancy and love were at length rewarded, and soon after she became my father's wife."

"She was an example of perseverance, indeed!" exclaimed Hugh Bardyll; "for a young and delicate woman to brave every difficulty and danger, under such circumstances, and to conquer all at last, was very striking!"

"It was," said Thomas Becket, rising; "it showed a mind that was not to be deterred from attaining its object by a few obstacles; and you will see her son follow her example, Bardyll."

The boys then separated.

We will now pass over some years. Hugh Bardyll, steady, diligent, and persevering, had acquired a thorough knowledge of his father's business, and was just returned from France, where he had been sent on matters connected with the trade. His heart was overflowing with happiness, and his face beamed with joy as he entered his home, from which he had now been absent many months.

After the first salutations were over, and he had briefly related to his father the success he had met with in his expedition, his younger brother John exclaimed, "Well, Hugh, what do you think of your old school-fellow, Thomas Becket? He is made Lord Chancellor of England!"

"Indeed!" answered Hugh, looking quite pleased, "I am glad to hear it: he has been rising from one step to another ever since he left school; I suppose now he is quite a great man?"

"Oh, yes, that he is. Do you know, Hugh, he is such a favourite with King Henry, on account of his learning, that he has appointed him tutor to the young prince, and Warden of the Tower, and I do not know

how many other things. He seems quite familiar and friendly with the king."

" Well, he always said he would be something great," observed Hugh ; " is he very rich too ? "

" Rich ! I should think he was, indeed ! Why, they say there never was so much splendour and magnificence seen before. His house is adorned with the richest furniture ; gold and silver glitter in all his rooms of state, and no cost is spared at his grand entertainments. Earls and barons daily dine with him, and sometimes even the king himself."

" And he has such a number of servants," observed his sister Matilda ; " he never moves without a train of them ; his dress is most splendid, and not a day passes but he gives some handsome present of horses, clothes, or money to some one."

" And then his horses' bridles, Hugh, are all of silver," continued John ; " and when he travels, he is accompanied by three hundred knights, with eight waggons to attend him, carrying provisions, furniture, and clothes. And more than that, when he crosses the sea he must have six ships to take him and his train over, though King Henry is usually content with one."

" Well, he is a great man, truly," remarked Hugh ; " but his abilities gave promise of something. I wish him well with all my heart, but I do not envy him, nor would I change places with him. I would rather be Hugh Bardyll, respectable and respected in my own station of life, with a prosperous trade and a quiet, happy home, than Thomas Becket in all his magnificence." And Hugh looked round on the dear home faces with a smile of true contentment.

" I believe it, son, I believe it !" said old Bardyll, grasping his son's hand, with a look of paternal pride ; " and take my word for it, my honest Hugh, you are as happy a man as he is, if not happier. By your perseverance and industry you have made the business more thriving than it ever yet has been ; and you are a comfort to your old father, my boy ; and there is no small satisfaction in feeling that. I wish I could say the same of your old schoolfellow, Harry Romild ; you remember him, Hugh ? "

" Certainly ; is not Harry going on well ? "

" Far from it. He never would apply himself to business, notwithstanding all his father could say, and fell into idle, extravagant habits. At last, the old man, vexed and angry, and tired of speaking to him, declared he would supply him with no more money. Poor Harry ! he was always a good-tempered fellow, but very idle and careless, and now he is reaping the reward of these sad habits ; he has scarcely a coat to his back."

" Oh, father !" said John, " I heard a story of him the other day which made me laugh. King Henry and Becket were riding together through the street, during that snowy weather, when they met a man so thinly clad that he shivered with cold. King Henry observed, it would be a good deed to give that poor man a warm coat. The Chancellor agreed, and said, ' You do well, Sir, in thinking of so good an action.' Then he shall have one directly,' replied the king ; and seizing on Becket's cloak, which was of scarlet, lined with ermine, he tried to pull it off. The Chancellor, not liking to part with it, resisted, and a regular scuffle commenced, in which the king and he very nearly pulled each other off their horses. At last Becket gave up the point, and King Henry, taking the cloak, presented it to the astonished man, who was no other than Harry Romild. It was a most amusing scene ; and Harry strutted away in the Chancellor's scarlet cloak as proud as any peacock."

"Amusing indeed! and on what intimate terms Becket must be with the king!" observed Hugh. "But I am very sorry for Harry; I will go and see him soon, and try to persuade him to be steady and attentive to business."

Not very long after this conversation, it was announced in London that King Henry had promoted Thomas Becket to be Archbishop of Canterbury. But from that hour the whole of his life and conversation underwent a change. He laid aside all his parade and luxury; he gave no more splendid entertainments; he dressed plainly, and lived abstemiously. His numerous servants were dismissed; his gay amusements given up. Towards the king also his behaviour was quite altered. He was no more his familiar companion, ready to agree to whatever he proposed; but became distant, proud, and unbending. Now that he was made Archbishop of Canterbury, his first thought was to defend the rights of the Church. The king opposed him; but Becket was a bold, ambitious, and clever man, and the contest lasted a long time. You will read an account of it, in English history, when you are older; I will only tell you that they kept each other in a continued state of ferment and irritation for about eight years.

In the meantime, though in a far humbler rank of life than his more ambitious schoolfellow, Hugh Bardyll was happy and contented. He was endeavouring to do his duty in the station in which God had placed him, and whoever aims to do that, enjoys a solid happiness and satisfaction which neither riches nor grandeur can impart. By his attention and skill he had greatly increased his father's trade, and was now married, and settled in a house of his own. His advice and entreaties had been thrown away on Harry Romild, who declared that now he could not settle to business if he wished it; the steady attention necessary was so opposed to all his habits. He could not work, and if his friends did not support him, he must starve.

Hugh was sitting one evening in his little parlour, his wife preparing his supper, his children playing around him, and he himself the picture of happiness, when his father entered, and by his hasty step, and the agitation on his brow, plainly showed that he was the bearer of distressing tidings. It was a minute or two before the old man could speak, but when he had swallowed a cup of wine which Hugh offered him, he recovered a little, and looking on his son with alarm and consternation on his countenance, he gasped, "Oh, Hugh! Hugh! a more terrible murder was never committed!"

"Murder! who, father? Oh! speak; who is murdered?"

"Becket, the Archbishop of Canterbury, on the very steps of the altar."

"The Archbishop!" exclaimed Hugh, turning pale with horror; "who did such a fearful deed? tell me, father, who could do it?"

"Some of the king's own knights, Hugh," replied the old man. "You know that King Henry and Thomas Becket, though once such great friends, have not lately shown much love to each other. The king has been exasperated by the Archbishop's conduct, which has been proud and unyielding, and people say he has treated him at times unjustly, and even severely. Be that as it may, a few days since, King Henry, who is in Normandy, being annoyed and irritated by fresh reports of Becket's proceedings, said, in an unhappy moment, 'Is there no one to rid me of this turbulent priest?' Ah! Hugh, we should be mindful of our words when we feel angry. The poor king little thought to what that hasty speech would lead! Four of his knights, thinking he wished the death of the

Archbishop, started immediately for Canterbury, and proceeded to Becket's house. Finding he refused to comply with their demands to sign some papers, they retired ; but afterwards, as he was performing service in the cathedral, they rushed upon him, and savagely murdered him before the altar. Oh ! it was a terrible deed !"

" Terrible, indeed !" said Hugh ; " it will fill all England with horror ; but do you think really, father, that the king had no hand in it ? "

" Hugh, I feel sure that he had not. Men may say what they will about it, and much is being said, but the character of Henry the Second stands too high for such an accusation. He spoke rashly, and bitterly has he repented his words ; but he never meditated the death of the Archbishop of Canterbury."

" What did he say when he heard of the cruel murder ? "

" He was exceedingly shocked and concerned. He shut himself up in his room for three whole days, and neither ate nor drank, refusing to see or to speak to any one. At last the attendants forced open his door, and persuaded him to take some refreshment."

" Well," said Hugh Bardyll, after a pause, " it is a shocking story ! a sad close to the high career of my poor schoolfellow ; his busy life and ambitious hopes are all over now ! I am sure I feel more contented than ever with my own lot in life."

" Is that the end of the story, dear aunt ? " said Edward ; " thank you, I like it very much. But which of the Henrys did you say was king when Thomas Becket lived ? "

" Henry the Second, my dear, the first king of the house of Plantagenet, and grandson of Henry the First, of whom I told you a story a short time since. Now, George, my dear, you see what application and perseverance will do, with or without great abilities ; let it be a lesson to you when meeting with difficulties, and do not forget the history of "THE SCHOOLFELLOWS."

#### ARCHBISHOP CRANMER.

MARTYR, MARCH 21, 1555-6.

CRANMER, the first Protestant Archbishop of Canterbury, was a zealous promoter of the Reformation, and the most distinguished of those men who laid down their lives in the cause of the reformed religion. The first step which he took to bring about the Reformation, was to procure the Convocation to petition the King that the Bible might be translated into English : when published, and recommended by royal authority, he dispersed it as much as possible. He crowned King Edward the Sixth ; caused the Homilies to be composed ; and, through his means, the Book of Common Prayer was finished, and settled by Act of Parliament, as were the Articles of the Church of England.

The fatal day (the 21st of March, 1555-6) had now arrived, on which Cranmer was to be committed to the flames. When he came to the place, opposite Balliol College, Oxford, where the holy bishops and martyrs of God, Hugh Latimer and Nicholas Ridley, had been burnt before him for the confessing of the truth, kneeling down, he prayed to God ; and, not long tarrying in his prayers, putting off his garments, he prepared himself to his death. His linen was made long, down to his feet. His feet were bare ; likewise his head, when both his caps were off, was so bare, that one hair could not be seen upon it. His beard was long and thick, covering

his face with marvellous gravity. Then was an iron chain tied about him, whom, when they perceived to be more stedfast than that he could be moved from his sentence, they commanded the fire to be set unto him. And when the wood was kindled, and the fire began to burn near him, stretching out his arm, he put into the flame his right hand, with which he had signed his former recantation,\* and which he held so steadfast and immovable, saving that once with the same hand he wiped his face, that all men might see his hand burned before his body was touched. His body did so abide the burning of the flame, with such constancy and steadfastness, that, standing always in one place, without moving his body he seemed to move no more than the stake to which he was bound : his eyes were lifted up unto heaven, and oftentimes he repeated, "This unworthy right hand!" so long as his voice would suffer him ; and using often the words of St. Stephen, "Lord Jesus, receive my spirit," in the greatness of the flame he gave up the ghost.†

REFLECTION.—We may learn from this example, that in life the fears of death frequently overcome our resolution ; but that in the act of death the Christian is strengthened and upheld by Him, who in his own person conquered death.

#### THE PEBBLE COLLECTOR.



IT was a beautiful afternoon in early autumn ; the sun shone brightly on a towering hill upon my right, a little rivulet trickled noiselessly down toward the sea on my left, while the tide in front, rising rapidly, was, as the sea ever is when present, the chief attraction to the eye. A narrow

\* Strype informs us that Archbishop Cranmer was subtilely drawn in by the Papists to subscribe, by way of recantation, six different papers ; the first being expressed in ambiguous words, capable of a favourable construction. The five following were added as explanations of it.

† Wordsworth's Eccl. Biog., vol. iii.

line of sea-weed marked the boundary which the waves had not yet passed, and children stood on the edge, throwing in pebbles, and laughing at the haste with which now and then a sudden advance of the tide made them retreat backward.

Among the children stood an old gentleman, of perhaps sixty years. His figure was slightly bent, and his hair silvery white; but his cheek was ruddy, and his appearance that of a green old age. As he approached the water, he stooped down to pick up something, which proved to be a pebble; this he carefully deposited in his pocket, and quickly seized a couple more; and thus proceeded. Some that he gathered were pretty white ones; others having nothing attractive either in shape or colour.

By this time he had reached the water-line, where he began to rake with his cane among the sea-weed, and pulled out now a stone, now a fragment of red earthenware, which the action of the waves had gradually worn to the shape of a rounded pebble.

This was not the first occasion on which I had seen him. The childishness of his occupation, and the intent eagerness with which he followed it at all hours, and every day, had attracted my notice before. Sundays and week-days he was still engaged in his indefatigable work of collecting, with this difference, that a wallet of oiled silk which he carried as an accessory pocket in the week, was not borne on the Sunday. Suspecting that the poor gentleman was of unsound mind, curiosity impelled me to ascertain the fact. Accordingly I strolled by his side, and watched for a few moments his proceedings before I addressed him.

"Are you collecting shells, sir?" said I, in as silvery a tone as I could command.

"Yes," he replied, gruffly, and turned away short on his heel. Then in an instant turning again, he said, "Shells! no, stones; such stones as these," poking out at the same moment, with the end of his walking-stick, a pebble of white quartz as large as a walnut, which, stooping with some difficulty, he picked up and carefully dropped into his pocket, which was evidently half full already.

"And do you collect them as curiosities, or do you make any use of them?" I inquired.

"Oh! use, use, to be sure, I make buttons of them, buttons." Then in a lower, confidential tone, "I've got a machine that cuts 'em into buttons. It cost as much as five or six pounds!"

"Shirt-buttons, or studs?" I asked, but to this he made no reply.

"Have you a large stock of buttons, then?" I continued, after a few moments; he all the while going on with his work as if his life depended on his industry.

"Not here, not here; I have none here."

"Then where do you cut them? where is your machine? in the town here?"

"Oh, no, at my own house."

"And where is your house," I asked.

"Ah!" said he, looking mysterious and sly; "where is my house! Never mind, never mind!"

"Oh, I beg pardon," I said in an apologetic tone; "I thought you might be carrying on business here."

"Business! Oh no! why I've got five-and-twenty pounds a day!"

"That is a large income indeed," said I: "And is there much demand for these buttons?"

"There will be soon. But I make my relations wear them ; and they all do it too, all of 'em."

"Is it shirt-buttons you make?" I ventured again to ask.

"Oh! all kinds of buttons ;—shirt-buttons, coat-buttons, waistcoat-buttons ;—all kinds : I'll show 'em to you one of these days."

But here he changed his manner ; turning towards me with the air of one going to impart a valuable secret, he said, "They're transparent ; but nobody knows it. Isn't that odd?" Then holding up before me a common white pebble, as opaque as a hen's egg, he mysteriously repeated, "Yes, they're transparent. But is it not strange that nobody knows it?"

It was evident that the intellect of this old man was defective ; but his amusements being harmless in their character, he was allowed to follow them without molestation or restraint. Yet not without a watchful, but unobtrusive supervision, for, as I subsequently found, an attendant was always at hand, who had the tact to keep his charge constantly in sight, without allowing the poor gentleman to perceive that there was any check upon his actions.

Whatever of amusement or light thoughts had been suggested by his occupation, had quickly passed away from my mind, and had given place to sober, and I hope profitable, reflections. I looked on the busy seriousness of this aged man, who, perhaps, in time past had enjoyed a vigorous intellect, and many of the pleasures of the world, of business, of family ties, of useful life—I looked forward, and beheld an heir of immortality on the verge of eternity, unconscious, unthinking, perhaps unprepared. I said to myself, "Ought I not to speak a word to him on higher matters than these?" but I felt that his time was gone by for learning the way of salvation ; and that his doom was as much fixed as if the grave had already closed over him. All that was left of understanding was not greater than that of the little child of three years old, standing by my side, and engaged in a similar occupation. With the one all that was of the intellect was past, with the other all future. Yet how little does this poor idler differ from most of us ! we are on the brink of the great sea of eternity, gathering useless pebbles and bits of glass. It seems not so to us : there appears a value in the gold and silver, the treasure, whether it be of the brain or the purse, which we are accumulating ; but do we ever ask ourselves, "Where are we standing ? whither are we going ? of what value will our treasures be when we arrive at our journey's end?"

Our poor old man had a vast collection of pebbles at home ; he thought them very precious. When questioned about them he sometimes said he made clothes of them, sometimes buttons, but always considered them of great value ; so we think of much that we accumulate, which will be in the great day only as "wood, hay, stubble," as pebbles and bits of earthenware.

"The children of this world are wiser in their generation than the children of light." Let us take a lesson of them. Let not the lunatic or the idiot be more diligent in his useless work than the child of God, in laying up heavenly treasure.

Let not the man of the world be more earnest in amassing a store of wealth or learning, than we are in making our calling and election sure. And as day after day I see this melancholy wreck of lost intellect, may I be incited to use the light while I have the light, lest darkness come upon me ; lest my sun go down, and my time of serving the Lord pass away, even while the poor body still crawls about on the earth. It is a trite

subject to speak of—the uncertainty of death-bed repentance ;—but I would recommend any who are trusting to it, to ponder on the many things which make it possible they may never have the opportunity they so confidently anticipate, and among the rest that their reason may fail before the body sinks into decay.

## MRS. GIBSON.



IT was a just but severe rebuke which fell from the lips of one reverend in wisdom and in years, and addressed to a lady who was notorious for censoriousness : “ Madam, you have the curse of all curses in your head—the curse of an evil tongue : ” for whether it be considered in its effects upon the happiness of others, or the misery it entails upon its possessor, few propensities are more to be dreaded and avoided than this. Alas for human infirmity ! that the taming of the wild beast, the management of the fiery steed, or the guidance of the stately vessel, should be an easier task than the bridling of that member, which, unruly as our sinful nature has made it, is yet the best we have, and was assuredly given us for our own glory and for the praise of God !

On the confines of Devonshire, towards the north, lies one of the prettiest villages that the sun in its wide career smiles upon. Hill and dale, wood and stream, diversify its scenery, and leave little for the admiring eye to desire. Nor are its inhabitants unworthy of the advantages of their situation ; less vice and more general rectitude of conduct are not to be found in any hamlet of its size in the kingdom. Yet lovely as it is, and happy and virtuous as are still the race that people it, it once owned a scourge which was felt by all in turn.

That scourge, the dread alike of young and old, was a Mrs. Gibson, the widow of a respectable farmer, who having now little to do herself, made it her business to interest herself in every other person’s concerns. No one did right in her eyes ; she had “ a crow to pluck ” in every house : defects that were scarcely visible to others were to her glaring and inexcusable. Notwithstanding that she spared nobody, and prided herself upon her candour, she had yet a cowardly way of attacking a person, that was more provoking than any other she could have adopted. Having dissected, as

it were, in the face of her victim, the character and habits of another, and animadverted upon them according to her own ideas of right and wrong—which, by-the-by, were rather singular—the only answers she would return to the indignant retort she provoked, was a cool—“*I meant nothing: if the cap fits, pray put it on.*”

In this way she was feared and disliked by all, and a most unwelcome visitor in any house she thought fit—and she was never ceremonious—to enter. Not far from her own residence lived a young married couple of the name of Shaw; the man was a native of the place, but his wife was a distant connection of his family living in the neighbouring county. She was a well-behaved, modest young woman, extremely neat both in her person and her dwelling, and in no way ambitious of making an appearance above her means. She had a particular dread of Mrs. Gibson; the very shadow of her as she passed her window gave her an uncomfortable sensation. Mrs. Gibson knew she was no favourite, but her visits were not the less frequent either to her or to any one else on that account; if she had been scrupulous on that score, poor woman, she would have seen the inside of very few houses besides her own.

One day Mrs. Gibson set out on a stroll. Wherever she obtruded herself she scattered the baneful effects of her malignant spirit, and left uneasiness behind her. “If ever that woman attempts to come again into my house,” exclaimed the last person whom she had attacked as usual, “I will shut the door in her face. If I am doing wrong, let me be told of it openly and kindly, and I will never quarrel with an elder either for the advice or the reproof she may give me; but to come like Mrs. Gibson, pulling one to pieces, talking at one, striving to hurt one’s feelings every way, while she pretends to be speaking of somebody a hundred miles off, is more than I can bear. And then the look she puts on when she has provoked one to speak! only let a person once see it, and, be she whom she may, she will never forget it.” And the woman who thus spoke was a kind-hearted creature, who would have found a nook in her cottage, full as it was, for any one who had needed it, and who never refused the counsel of a friend. O that such pests of society like Mrs. Gibson would recollect, that if to follow a multitude to do wrong be evil, to cause another to speak “unadvisedly with his lips” is a sin of no small dye.

Gratified, however, at the angry emotions she saw she had raised, she was about to take the turn to her own house, when, recollecting she had seen some one go in to Mrs. Shaw’s, whom she did not recognise immediately, she altered her mind, and, to the vexation of Lizzy, as her husband called her, Mrs. Gibson stood in the doorway of her little apartment before she was aware. She almost started when she perceived her, and whether the words she muttered were an invitation to stay, or an excuse for wishing her to depart, neither herself nor any other person probably could have told. Both, however, were equally immaterial to Mrs. Gibson. “O! never mind me,” exclaimed she, seating herself and casting a sharp glance at the stranger, whose face was so far turned from her that she could not accurately discern her features. “I can’t stay long—I’m not like some people who can find time to spend half the day in another’s house.”

Conversation would have lagged had it depended for its liveliness on either Mrs. Shaw or her visitor; for the manner of the former was very constrained, and her attention was anxiously directed to the latter, who, in

her turn, accepted of her civilities almost in silence. The appearance of this person very much puzzled Mrs. Gibson; her dress was far more expensive than an acquaintance of Mrs. Shaw's ought to have worn, and yet it was so plain and simple, that she could not suspect the wearer to be "any one very much out of the way." She was provoked too that the stranger took no notice of herself; and she could not but perceive that her presence was considered as an intrusion. With a spirit becoming her, she therefore determined, be the visitor who she might, "to sit her out;" but first, she resolved she would "have a slap at both." For this purpose she began as usual by taking a circuit round their mutual acquaintance, gradually narrowing her path till she touched the limits she desired.

"I have been to our neighbour Pasgrave's this morning," said she, "but I did not find her up as I expected. Ay, bed's a nice place when one's really ill, and not wanted elsewhere; but how people can lie there who have families to attend to, and have no better excuse for the indulgence than a headache, or some such thing, I can't think."

"Did you tell her so?" said Lizzy, with that want of tact which is often caused by uneasy feelings, and a desire to be rid of a present annoyance.

"Tell her so!" repeated Mrs. Gibson, "not I; that's not my way: but I gave her to understand what I meant; and she must be dull indeed if she did not take me." There was a short pause. Mrs. Gibson resumed.

"As I was coming to you I met Tim Hawkins; he was, as usual, full of complaints of bad times, and bad crops, and the rest of it; but I was not going to waste my time with him. 'Neighbour Hawkins,' said I, 'times are not what they used to be when my husband and I were in business, nor are people either; they who put their fingers into every silly flame that's kindled, must expect to burn them.' As he was turning on his heel, for he took it, who should come up but Sally Pierce! 'So you are going to a new situation on Monday,' said I; 'I wish you luck; you have had a good many places lately.' 'But I think I have quite got my health again,' said she. 'All the better,' said I, 'for really girls have such fauries now-a-days, that if they have a little more work than suits them, their thumb aches, and home they go.'

"O Sally has been very ill," said Lizzy; "poor thing, it grieved me to see her look so pale and thin."

"Let them pity her that like work no better than she does," replied Mrs. Gibson; "for my part I don't pity her, nor any of her sort. I always found stirring about the best cure for my ailments; and so might others if they had the spirit to try it; but no, idleness, pride, and extravagance, they are to be found everywhere. If you go into a house, it may be of a young couple, what do you see? enough to disgust any one who knows what's what. They must have things, to be sure, that their betters hardly knew the use of a few years ago; a blind to their window, of course;—what have people like them to hide from their neighbours?"—and a sneer that poor Lizzy felt in every nerve accompanied her words;—"and a mahogany table instead of a deal one, and a bit of carpet to put their feet upon, and a smart set of tea-things; and blue ware instead of good old-fashioned white plates; and they must treat with new bread and biscuits if a person drops in, and no doubt with wine too, or where would be the use of wine glasses; and then—O! they can't live on what they have—how should they? Let them say what they will, it is pride, pride, and nothing but pride, that is at the bottom of it all. Don't you think it is, Mrs. Shaw?"

She now fixed her keen eye, which had wandered from one article to another as she spoke, full on the face of Lizzy, who, colouring deeply, said—

“It was a pity if such were the case.”

“A pity, indeed!” retorted Mrs. Gibson; “a shame you mean; but some folks never put a cap on, let it fit never so well: and some are just the contrary, they will be trying on every one, whether made for them or not.” She glanced at the stranger, who, without once replying to anything she said, had continued quietly to partake of the simple refreshment which Lizzy had placed before her, and which from time to time she presented to her. “And dress! it is quite wonderful to see what a pitch it is come to; there’s no telling now-a-days who’s who; everybody looks alike—it’s all pride; and then they must needs go into a neighbour’s house, and eat for luncheon, perhaps, what the others were to have had for their dinner.”

This time she succeeded in drawing the desired remark. The stranger turned towards her; “I suppose,” said she, “you are now alluding to ~~me~~? ”

“O, I never use names,” replied Mrs. Gibson; “when the cap fits, I’m not one to prevent it being worn: all I have to say is this; it is wonderful how people can find time to gossip in other persons’ houses, or how other people can entertain them there.”

Poor Mrs. Shaw looked the very picture of distress. She made a motion to Mrs. Gibson to be quiet, which she would not see; and she cast a beseeching glance towards her visitor, who, returning an encouraging smile to her, with marked severity thus addressed Mrs. Gibson:—

“I quite agree with you,” said she, “that it is really wonderful how time can be found for the purposes you mention. There are, however, many idle, many impudent and curious persons in the world, but there is a character occasionally to be met with, which is not less obnoxious to society than disgraceful to our sex: one who, under a hypocritical regard for what is right, covers a malignant intention, and takes pleasure in the infliction of wounds for which nothing but malice could find a pretence; one against whom every door would be most justly closed, since it is entered only to spread the poison of an envenomed tongue; and upon whom the brand of ‘avoidance’ may, without any breach of charity, be affixed.”

Mrs. Gibson stared at the speaker with unfeigned astonishment.

“‘If the cap fits,’ to use your own phrase, as fit it must, I beg you to put it on, and to wear it till you have learned a lesson which you may find advantageous to you. My late maid, Mrs. Shaw, is a worthy, exemplary young woman, who happily knows how to combine propriety with economy, and who, in the humility of her heart, seeks for nothing which her former prudence and industry, and a regard to her present position in life, does not sufficiently justify. Your husband was, if I mistake not, long a tenant, as your son at present is, of my brother: you now know who I am; and I trust you will learn in future not only to spare your neighbours, but to be cautious how you attack a stranger, even for your own sake.”

## CONSCIENCE, OR THE DREAM OF EUGENE ARAM.

'TWAS in the primo of summer time,  
 An evening calm and cool,  
 And four-and-twenty happy boys  
   Came bounding out of school :  
 There were some that ran, and some that leapt,  
   Like troutlets in a stream.

Away they sped with gamesome minds,  
 And souls untouched by sin ;  
 To a level mead they came, and there  
   They drove the wickets in :  
 Pleasantly shone the setting sun  
   Over the town of Lynn.

Like sportive deer they coursed about,  
 And shouted as they ran,  
 Turning to mirth all things of earth,  
   As only boyhood can :  
 But the usher sat remote from all,  
   A melancholy man !

His hat was off, his vest apart,  
 To catch heaven's blessed breeze ;  
 For a burning thought was in his brow  
   And his bosom ill at ease,  
 So he leaned his head on his hands, and read  
   The book between his knees !

Leaf after leaf he turned it o'er,  
 Nor ever glanced aside ;  
 For the peace of his soul he read that book  
   In the golden eventide :  
 Much study had made him very lean  
   And pale, and leaden eyed.

At last he shut the ponderous tome ;  
 With a fast and fervent grasp  
 He strained the dusky covers close,  
   And fixed the brazen hasp ;  
 "O Go-l, could I so close my mind,  
   And clasp it with a clasp !"

Then leaping on his feet upright,  
 Some moody turns he took ;  
 Now up the mead, then down the mead,  
   And past a shady nook :  
 And lo ! he saw a little boy  
   That pored upon a book !

"My gentle lad what is't you read—  
 Romance or fairy fable ?  
 Or is it some historic page,  
   Of kings and crowns unstable ?"  
 The young boy gave an upward glance  
   "It is the Death of Abel."

The usher took six hasty strides,  
 As smit with sudden pain ;  
 Six hasty strides beyond the place,  
   Then slowly back again,  
 And down he sat beside the lad,  
   And talked with him of Cain :

## THE HOME FRIEND.

And long since then of bloody men,  
 Whose deeds tradition saves ;  
 Of lonely folk cut off unseen,  
 And hid in sudden graves ;  
 Of horrid stabs, in groves forlorn,  
 And murders done in caves ;  
 And how the sprites of injured men  
 Shriek upward from the sod—  
 Ah, how the ghostly hand will point  
 To show the burial clod ;  
 And unknown facts of guilty acts  
 Are seen in dreams from God ;  
 He told how murderers walked the earth  
 Beneath the curse of Cain—  
 With crimson clouds before their eyes,  
 And flames about their brain :  
 For blood has left upon their souls  
 Its everlasting stain !

“ And well,” quoth he, “ I know, for truth,  
 Their pangs must be extreme —  
 Wo, wo, unutterable wo —  
 Who spill life’s sacred stream !  
 For why ? Methought last night I wrought  
 A murder in a dream !

“ One that had never done me wrong —  
 A feeble man and old ;  
 I led him to a lonely field  
 The moon shone clear and cold :  
 Now here, I said, this man shall die,  
 And I will have his gold !

Two sudden blows with a ragged stick,  
 And one with a heavy stone,  
 One hurried gash with a hasty knife —  
 And there the deed was done :  
 There was nothing lying at my foot  
 But lifeless flesh and bone !

“ Nothing but lifeless flesh and bone,  
 That could do me no ill ;  
 And yet I feared all the more,  
 For lying there so still :  
 There was a manhood in his look,  
 That murder could not kill !

“ And lo ! the universal air  
 Seemed lit with ghastly flame —  
 Ten thousand thousand dreadful eyes  
 Were looking down in blame :  
 I took the dead man by the hand,  
 And called upon his name !

“ Oh, God ! it made me quake to see  
 Such sense within the slain !  
 But when I touched the lifeless clay,  
 The blood gushed out again,  
 For every clot, a burning spot  
 Was scorching in my brain !

*(To be continued.)*











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*Bound by*

*Titaruti.*

13, Patwarpagan Lane,

Date 9 JUL 1958